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California Regional Water Quality Control Board

San Francisco Bay Region

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Arnold Schwarzenegger
Governor

ORDER NO. R2-2006-0056
NPDES NO. CA0037699

The following Discharger is authorized to discharge in accordance with the conditions set forth in this Order:

Discharger	Vallejo Sanitation and Flood Control District
Name of Facility	Vallejo Sanitation and Flood Control District Wastewater Treatment Plant and its collection system
Facility Address	450 Ryder Street
	Vallejo, CA 94590
	Solano County

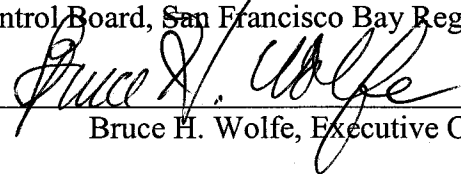
The Discharger is authorized to discharge from the following discharge points as set forth below:

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
E-001	Secondary treated effluent	38°, 3', 53" N	122°, 13', 42" W	Carquinez Strait
E-002	Secondary treated effluent	38°, 5', 23" N	122°, 15', 12" W	Mare Island Strait, a tributary to Carquinez Strait

This Order was adopted by the Regional Water Board on:	August 9, 2006
This Order shall become effective on:	October 1, 2006
This Order shall expire on:	September 30, 2011
The U.S. Environmental Protection Agency (US EPA) and the Regional Water Board have classified this discharge as a major discharge.	
The Discharger shall file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, not later than 180 days in advance of the Order expiration date as application for issuance of new waste discharge requirements.	

IT IS HEREBY ORDERED, that Orders No. 00-026 and No. R2-2003-0008 are rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in Division 7 of the California Water Code (CWC) and regulations adopted therein, and the provisions of the Federal Clean Water Act (CWA), and regulations and guidelines adopted therein, the Discharger shall comply with the requirements in this Order.

I, Bruce H. Wolfe, Executive Officer, do hereby certify the following is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on August 9, 2006.


Bruce H. Wolfe, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD REGION 2, SAN FRANCISCO BAY REGION

ORDER NO. R2-2006-0056
NPDES NO. CA0037699

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	Attachment I – The following documents are part of this Permit, but are not physically attached due to volume. They are available on the internet at www.waterboards.ca.gov/sanfranciscobay/ - Standard Provisions and Reporting Requirements, August 1993 - Self-Monitoring Program, Part A, adopted August 1993 - August 6, 2001 Staff Letter: <i>Requirement for Priority Pollutant Monitoring in Receiving Water and Wastewater Discharges</i> - Resolution 74-10: <i>Policy Regarding Waste Discharger's Responsibilities to Develop and Implement Contingency Plans</i>	

I. FACILITY INFORMATION

The following Discharger is authorized to discharge in accordance with the conditions set forth in this Order:

Discharger	Vallejo Sanitation and Flood Control District
Name of Facility	Vallejo Sanitation and Flood Control District Wastewater Treatment Plant and its collection system
Facility Address	450 Ryder Street
	Vallejo, CA 94590
	Solano County
Facility Contact, Title, and Phone	Barry Pomeroy, Director of Operations and Maintenance, (707) 644-8949
Mailing Address	SAME
Type of Facility	POTW
Facility Design Flow	15.5 million gallons per day (mgd)

II. FINDINGS

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter Regional Water Board), finds:

- A. **Background.** Vallejo Sanitation and Flood Control District (hereinafter Discharger) is currently discharging under Orders No. 00-026 and R2-2003-0008, and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0037699. The Discharger submitted a Report of Waste Discharge, dated October 12, 2004, and applied for a NPDES permit renewal to discharge up to 60 mgd of treated wastewater from Vallejo Sanitation and Flood Control District Wastewater Treatment Plant, hereinafter Facility. The application was deemed complete on August 5, 2005.
- B. **Facility Description.** The Discharger owns and operates a collection system and secondary level wastewater treatment facility. The treatment system consists of screening, aerated grit removal, primary sedimentation, biofiltration, biological aeration, mechanical skimming, secondary clarification, disinfection by chlorination and/or ultraviolet (UV), and dechlorination. Wastewater is discharged from Discharge Point E-001 to the Carquinez Strait, a water of the United States. During wet weather, wastewater may also be discharged from Discharge Point E-002 to Mare Island Strait, a tributary to Carquinez Strait. Attachment B provides a topographic map of the area around the Facility. Attachment C provides a flow schematic of the Facility.
- C. **Legal Authorities.** This Order is issued pursuant to section 402 of the Federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (US EPA) and Chapter 5.5, Division 7 of the California Water Code (CWC). It shall serve as a NPDES permit for point source discharges from the Facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to Article 4, Chapter 4 of the CWC for discharges that are not subject to regulation under CWA section 402.
- D. **Background and Rationale for Requirements.** The Regional Water Board developed the requirements in this Order based on information submitted as part of the application, through

monitoring and reporting programs, and through special studies. Attachments A through I, which contain background information and rationale for Order requirements, are hereby incorporated into this Order and, thus, constitute part of the Findings for this Order.

- E. **California Environmental Quality Act (CEQA).** This action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21100, et seq.) in accordance with Section 13389 of the CWC.
- F. **Technology-based Effluent Limitations.** The Code of Federal Regulations (CFR) at 40 CFR §122.44(a) requires that permits include applicable technology-based limitations and standards. This Order includes technology-based effluent limitations based on Secondary Treatment Standards at 40 CFR Part 133. The Regional Water Board has considered the factors listed in CWC §13241 in establishing these requirements, or Best Professional Judgment (BPJ) in accordance with 40 CFR §125.3. A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet (Attachment F).
- G. **Water Quality-based Effluent Limitations.** Section 122.44(d) of 40 CFR requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. Where numeric water quality objectives have not been established, 40 CFR §122.44(d) specifies that WQBELs may be established using US EPA criteria guidance under CWA section 304(a), proposed State criteria or a State policy interpreting narrative criteria supplemented with other relevant information, or an indicator parameter.
- H. **Water Quality Control Plans.** The Regional Water Board adopted a Water Quality Control Plan for the San Francisco Bay Basin, *Water Quality Control Basin (Region 2)*, (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives (WQOs), and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. The Basin Plan at page 2-5 also states that the beneficial uses of any specifically identified water body generally apply to its tributary streams. The Basin Plan does not identify beneficial uses for Mare Island Strait (E-002); but does for Carquinez Strait, to which Mare Island Strait is a tributary. In addition, State Water Resources Control Board (State Water Board) Resolution No. 88-63 requires that, with certain exceptions, the Regional Water Board assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in the Basin Plan. Thus, as discussed in detail in the Fact Sheet (Attachment F), beneficial uses applicable to Carquinez Strait are as follows:

Discharge Point	Receiving Water Name	Beneficial Use(s)
E-001 and E-002	Carquinez Strait	Ocean, commercial, and sport fishing (COMM), Estuarine habitat (EST), Industrial service supply (IND), Fish migration (MIGR), Navigation (NAV), Preservation of rare, threatened or endangered species (RARE), Water contact recreation (REC1), Noncontact water recreation (REC2), Fish spawning (SPWN), and Wildlife habitat (WILD).

- I. **Thermal Plan.** The State Water Board adopted a *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California* (Thermal Plan) on May 18, 1972, and amended this plan on September 18, 1975. This plan contains temperature objectives for inland surface waters.

Requirements of this Order specifically implement the applicable Water Quality Control Plans.

- J. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** US EPA adopted the NTR on December 22, 1992, which was amended on May 4, 1995 and November 9, 1999, and the CTR on May 18, 2000, which was amended on February 13, 2001. These rules include water quality criteria for priority pollutants and are applicable to this discharge.
- K. **State Implementation Policy.** On March 2, 2000, State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the US EPA through the NTR and to the priority pollutant objectives established by the Regional Water Boards in their basin plans, with the exception of the provision on alternate test procedures for individual discharges that have been approved by US EPA Regional Administrator. The alternate test procedures provision was effective on May 22, 2000. The SIP became effective on May 18, 2000. The State Water Board subsequently amended the SIP, and the amendments became effective on July 31, 2005. The SIP includes procedures for determining the need for and calculating WQBELs and requires dischargers to submit data sufficient to do so.
- L. **Compliance Schedules and Interim Requirements.** Section 2.1 of the SIP provides that, based on a discharger's request and demonstration that it is infeasible for an existing discharger to achieve immediate compliance with an effluent limitation derived from a CTR criterion, compliance schedules may be allowed in an NPDES permit. Unless an exception has been granted under Section 5.3 of the SIP, a compliance schedule may not exceed 5 years from the date that the permit is issued or reissued, nor may it extend beyond 10 years from the effective date of the SIP (or May 18, 2010) to establish and comply with CTR criterion-based effluent limitations. Where a compliance schedule for a final effluent limitation exceeds 1 year, the Order must include interim numeric limitations for that constituent or parameter. Where allowed by the Basin Plan, compliance schedules and interim effluent limitations or discharge specifications may also be granted to allow time to implement new or revised WQOs. This Order includes compliance schedules and interim effluent limitations. A detailed discussion of the basis for the compliance schedule(s) and interim effluent limitation(s) is included in the Fact Sheet (Attachment F).
- M. **Antidegradation Policy.** Section 131.12 of 40 CFR requires that State water quality standards include an antidegradation policy consistent with the Federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16, which incorporates the requirements of the Federal antidegradation policy. Resolution 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. As discussed in detail in the Fact Sheet (Attachment F) the permitted discharge is consistent with the antidegradation provision of 40 CFR §131.12 and State Water Board Resolution 68-16.
- N. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and Federal regulations at 40 CFR § 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. Some effluent

limitations in this Order are less stringent than those in the previous Order. As discussed in detail in the Fact Sheet (Attachment F) this relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and Federal regulations.

- O. **Monitoring and Reporting.** Section 122.48 of 40 CFR requires that all NPDES permits specify requirements for recording and reporting monitoring results. Sections 13225(c), 13267(b), and 13383 of the CWA authorize the Regional Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement Federal and State requirements. This Monitoring and Reporting Program is provided in Attachment E.
- P. **Standard and Special Provisions.** Standard Provisions, which in accordance with 40 CFR §§122.41 and 122.42, apply to all NPDES discharges and must be included in every NPDES permit, are provided in Attachment D. The Regional Water Board has also included in this Order special provisions applicable to the Discharger (Attachment I). A rationale for the special provisions contained in this Order is provided in the attached Fact Sheet (Attachment F).
- Q. **Notification of Interested Parties.** The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet (Attachment F) of this Order.
- R. **Consideration of Public Comment.** The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet (Attachment F) of this Order.

III. DISCHARGE PROHIBITIONS

- A. Discharge of any treated wastewater at a location or in a manner different from that described in this Order is prohibited.
- B. Discharge of treated wastewater at any point where it does not receive a minimum initial dilution of 10:1, or into dead-end sloughs and similar confined waters, is prohibited.
- C. The bypass of untreated or partially treated wastewater to waters of the State is prohibited, except as provided for bypasses under the conditions stated in 40 CFR 122.41(m)(4), and in A.13 of the *Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993* (Attachment I).

The Discharger has met the conditions at 40 CFR 122.41(m)(4)(i)(A), (B) and (C), as described in detail in the Fact Sheet of this Order for discharge of blended wastewater from Discharge Point E-001 as monitored at E-001. Blended wastewater is biologically treated wastewater blended with wastewater that has been diverted around biological treatment units or advanced treatment units. Such discharges are approved when (1) peak wet weather influent flow volumes exceed the capacity of the secondary treatment unit(s) of 30 MGD, and (2) the discharge complies with the effluent and receiving water limitations contained in this Order. Furthermore,

the Discharger shall operate the Facility as designed and in accordance with the Operation & Maintenance Manual developed for the Facility. This means that the Discharger shall optimize storage and use of equalization units, and shall fully utilize the biological treatment units and advanced treatment units, if applicable. The Discharger shall report these incidents of blended effluent discharges in routine monitoring reports, and shall conduct monitoring of this discharge as specified in the attached MRP (Attachment E).

- D. The discharge of average dry weather flows greater than 15.5 MGD is prohibited. The average dry weather flow shall be determined over three consecutive dry weather months each year.
- E. Any sanitary sewer overflow that results in a discharge of untreated or partially treated wastewater to waters of the United States is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Points E-001 and E-002

1. Final Effluent Limitations

- a. The discharge of treated wastewater shall maintain compliance with the following effluent limitations at Discharge Points E-001 and E-002, with compliance measured at Monitoring Location E-001 as described in the attached Monitoring and Reporting Program (Attachment E):

Parameter	Units ^[1]	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Carbonaceous Biochemical Oxygen Demand 5-day @ 20° (CBOD ₅)	mg/L	25	40	--	--	--
Total Suspended Solids (TSS)	mg/L	30	45	--	--	--
Oil and Grease (O&G)	mg/L	10	--	20	--	--
Total Chlorine Residual ^[3]	mg/L	--	--	--	--	0.0
pH ^[2]	standard units	--	--	--	6.0	9.0
Copper ^[5]	µg/L	110	--	148	--	--
Mercury Effective Starting: April 28, 2010	µg/L	0.023	--	0.032	--	--
Cyanide ^[4] Effective Starting: April 28, 2010	µg/L	3.2	--	6.4	--	--

Table Footnotes:

^[1] Unit Abbreviations:

mg/L = milligrams per liter
µg/L = micrograms per liter

^[2] pH

If the Discharger employs continuous monitoring, then the Discharger shall be in compliance with the pH limitation specified herein, provided that both of the following conditions are satisfied:

- 1) The total time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month; and

- 2) No individual excursion from the range of pH values shall exceed 60 minutes.

[3] Total Chlorine Residual.

The Discharger may elect to use a continuous on-line monitoring system(s) for measuring flows, chlorine and sodium bisulfate dosage (which could be interpolated), and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Regional Water Board staff may conclude that these false positive chlorine residual exceedances are not violations of these effluent limitations.

[4] Alternate Cyanide Effluent Limitation.

If a cyanide site-specific water quality objective (SSO) for the receiving water becomes legally effective, based on the assumptions in *Draft Staff Report on Proposed Site-Specific Water Quality Objectives and Effluent Limit Policy for Cyanide for San Francisco Bay*, dated November 10, 2005, and as summarized in the Fact Sheet (Attachment F), then, upon its effective date, the following alternate effluent limitations shall supercede these effluent limitations.

Maximum Daily of 40 µg/L, and Monthly Average of 19 µg/L

If a different cyanide SSO for the receiving water is adopted, the alternate WQBELs based on the SSO will be determined after the SSO effective date.

[5] Alternate Copper Effluent Limitation.

If a copper SSO for the receiving water becomes legally effective, resulting in adjusted saltwater criterion continuous concentration (CCC) of 2.5 ug/l and criterion maximum concentration (CMC) of 3.9 ug/l as documented in the *North of Dumbarton Bridge Copper and Nickel Site-Specific Objective (SSO) Derivation (Clean Estuary Partnership December 2004)*, upon its effective date, the following alternate limitations shall supercede these copper limitations. Details of the rationale for the alternate limitations are provided in the Fact Sheet (Attachment F) of this Order.

Maximum Daily of 66 µg/L, and Monthly Average of 49 µg/L

If a different copper SSO for the receiving water is adopted, the alternate WQBELs based on the SSO will be determined after the SSO effective date.

- b. 85 Percent Removal, CBOD₅ and TSS: The arithmetic mean of CBOD₅, and TSS values, by concentration, for effluent samples collected in each calendar month shall not exceed 15 percent of the arithmetic mean of the respective values for influent samples collected at approximately the same times during the same periods.
- c. Fecal Coliform Bacteria. The treated wastewater, at Discharge Points E-001 and E-002 as monitored at E-001, shall meet the following limits for bacteriological quality:
 - 1) The geometric mean value for all samples analyzed for fecal coliform within each calendar month shall not exceed a Most Probable Number (MPN) of fecal coliform bacteria of 200 MPN/100 mL; and
 - 2) The 90th percentile value for all samples analyzed for fecal coliform within each calendar month shall not exceed 400 MPN/100mL.
- d. Whole Effluent Acute Toxicity. Representative samples of the discharge at Discharge Points E-001 and at Discharge Point E-002, as monitored at E-001, shall meet the following limits for acute toxicity. Compliance with these limits shall be achieved in accordance with Section V.A of the attached MRP (Attachment E):
 - 1) The survival of bioassay test organisms in 96-hour flow-through bioassays of undiluted effluent shall be:
 - a) An eleven (11)-sample median value of not less than 90 percent survival; and

- b) An 11-sample 90th percentile value of not less than 70 percent survival.
- 2) These acute toxicity limits are further defined as follows:
 - a) 11-sample median limit:

Any bioassay test showing survival of 90 percent or greater is not a violation of this limit. A bioassay test showing survival of less than 90 percent represents a violation of this effluent limit, if five or more of the past ten or fewer bioassay tests also show less than 90 percent survival.
 - b) 90th percentile limit:

Any bioassay test showing survival of 70 percent or greater is not a violation of this limit. A bioassay test showing survival of less than 70 percent represents a violation of this effluent limit, if one or more of the past ten or fewer bioassay tests also show less than 70 percent survival.
- e. Whole Effluent Chronic Toxicity. Compliance with the Basin Plan narrative chronic toxicity objective, at Discharge Points E-001 and E-002 as monitored at E-001, shall be demonstrated according to the following tiered requirements based on results from representative samples of the treated effluent meeting test acceptability criteria and Section V.B. of the MRP (Attachment E) of this Order:
 - 1) Conduct routine monitoring;
 - 2) Accelerate monitoring after exceeding a three sample median value of 10 TUc or a single sample maximum of 20 TUc. A TUc equals 100/NOEL. The NOEL is the no observable effect level, determined from IC, EC, or NOEC values. These terms and their usage are defined in Attachment G of this Order;
 - 3) Return to routine monitoring if accelerated monitoring does not exceed either "trigger" in "2)";
 - 4) Initiate a chronic toxicity reduction evaluation (TRE) in accordance with Section V.D of the attached MRP (Attachment E) and continue accelerated monitoring if monitoring confirms consistent toxicity above either "trigger" in "2)";
 - 5) Return to routine monitoring after appropriate elements of TRE work plan are implemented and toxicity drops below "trigger" levels in "2)," or as directed by the Executive Officer.

2. Interim Effluent Limitations

- a. During the period beginning the effective date of this Order and ending on April 27, 2010, for cyanide and mercury, the discharge of treated wastewater shall maintain compliance with the following limitations at Discharge Points E-001 and E-002, with compliance measured at Monitoring Location E-001 as described in the attached MRP (Attachment E). These interim effluent limitations shall apply in lieu of the corresponding final effluent limitations specified for the same parameters during the time period indicated in this provision.

Parameter	Units	Maximum Daily
Cyanide	µg/L	10
Mercury	µg/L	0.087

- b. The Regional Water Board intends to amend these limitation based on the cyanide SSOs if necessary, or the Total Maximum Daily Load's (TMDLs) Waste Load Allocations (WLAs) for mercury.

c. Mercury Mass Limit and Mass Trigger – Discharge Points E-001 and E-002

Until TMDLs and WLAs efforts for mercury provide enough information to establish a different WQBEL, the Discharger shall demonstrate that the total mercury mass loading from Discharge Points E-001 and E-002 to the receiving water does not increase, by complying with the following:

- 1) **Mass limit:** The 12-month moving average annual load for mercury shall not exceed **0.357 kg/month**. Compliance shall be calculated using 12-month moving average loadings calculated from average monthly plant flows and combined effluent concentrations for the discharges to Carquinez Strait (E-001) and to Mare Island Strait (E-002) from the entire year.
- 2) **Mass trigger:** If the 12-month moving average monthly mass loading for mercury exceeds **0.058 kg/month**, the actions specified in Provision VI.C.2.c. shall be initiated. Failure to initiate and complete the actions will be considered a permit condition violation.
- 3) **Compliance determination method:** Compliance for each month will be determined based on the 12-month moving averages over the previous 12 months of monitoring calculated using the method described below:

Flow 1 (mgd) – flow to Carquinez Strait (E-001)

Flow 2 (mgd) – flow to Mare Island Strait (E-002)

Hg Concentration (µg/L) – concentration measured at E-001 corresponding to Flow 1

Monthly mass loading (kg/month) = [(Flow 1 plus Flow 2) times (Hg Concentration)] times 0.115

12-month moving average Hg mass loading = Running average of last 12 monthly mercury mass loadings in kg/month

- 4) **Mercury TMDL and WLAs.** The mercury TMDL and WLAs will supersede this interim mass emission limitation upon their implementation through a permit amendment. The Clean Water Act's anti-backsliding rule, Section 402(o), indicates that this Order may be modified to include a less stringent requirement following adoption of the TMDL and WLA, if the requirements for an exception to the rule are met.

B. Land Discharge Specifications – N/A

C. Reclamation Specifications – N/A

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order. The discharge shall not cause the following in Carquinez Strait nor in Mare Island Strait:

1. The discharge shall not cause the following conditions to exist in waters of the State at any place:
 - a. Floating, suspended, or deposited macroscopic particulate matter or foam;
 - b. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;
 - c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;
 - d. Visible, floating, suspended, or deposited oil or other products of petroleum origin; and
 - e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on wildlife, waterfowl, or other aquatic biota, or which render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.
2. The discharge shall not cause nuisance, or adversely affect the beneficial uses of the receiving water.
3. The discharge of waste shall not cause the following limits to be exceeded in waters of the State at any place within one foot of the water surface:
 - a. Dissolved Oxygen: 5.0 mg/L, minimum

The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.
 - b. Dissolved Sulfide: 0.1 mg/L, maximum
 - c. pH: Variation from normal ambient pH by more than 0.5 pH units

- d. Un-ionized Ammonia: 0.025 mg/L as N, annual median; and 0.16 mg/L as N, maximum
 - e. Nutrients: Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
4. The discharge shall not cause a violation of any particular water quality standard for receiving waters adopted by the Regional Water Board or the State Water Board as required by the Clean Water Act and regulations adopted thereunder. If new applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Regional Water Board may reopen and modify this Order in accordance with such standards.

B. Groundwater Limitations – N/A

VI. PROVISIONS

A. Standard Provisions

1. **Federal Standard Provisions.** The Discharger shall comply with all Standard Provisions included in Attachment D of this Order.
2. **Regional Water Board Standard Provisions.** The Discharger shall comply with all applicable items of the attached *Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993* (the Standard Provisions, Attachment I), including amendments thereto. Where provisions or reporting requirements specified in this Order are different from equivalent or related provisions or reporting requirements given in the Standard Provisions, the specifications of this Order shall apply.

- B. Monitoring and Reporting Program Requirements.** The Discharger shall comply with the Monitoring and Reporting Program (MRP), and future revisions thereto, in Attachment E of this Order. The Discharger shall also comply with the requirements contained in Self-Monitoring Program, Part A (August 1993) (Attachment I), including any amendments thereto.

C. Special Provisions

1. **Reopener Provisions.** The Regional Water Board may modify or reopen this Order prior to its expiration date in any of the following circumstances as allowed by law:
 - a. If present or future investigations demonstrate that the discharge(s) governed by this Order will, or cease to, have adverse impacts on water quality and/or beneficial uses of the receiving waters.
 - b. If new or revised WQOs come into effect, or following the completion of TMDLs and WLAs, for the San Francisco Bay estuary and contiguous water bodies (whether

statewide, regional, or site-specific). In such cases, effluent limitations in this Order will be modified as necessary to reflect updated WQOs, or the WLA in the TMDL.

- c. If translator or other water quality studies provide new information and a basis for determining that a permit condition(s) should be modified.
- d. If administrative or judicial decision on a separate NPDES permit or WDR that addresses requirements similar to this discharge.
- e. Or as otherwise authorized by law.

The Discharger may request permit modification based on the above. The Discharger shall include in any such request an antidegradation and antibacksliding analysis, if applicable.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

- a. **Blending Monitoring Study.** The Discharger shall comply with the following tasks and deadlines:

Tasks	Compliance Date
(1) <i>Blending Study Plan.</i> The study plan shall outline data collection for the purpose of demonstrating that TSS is an appropriate indicator of compliance with other effluent limitations during blending events.	6 months following effective date of permit
(2) <i>Implementation of the Study Plan.</i> Upon approval by the Executive Officer, or after 45 days of the study plan submittal if the Executive Officer has not commented, the Discharger shall conduct the study plan.	As specified in the study plan.
(3) <i>Final Report.</i> The Discharger shall submit a report, acceptable to the Executive Officer. The report shall include an analysis of TSS as an indicator of compliance with effluent limitations, and a recommendation for a TSS trigger value. The purpose of the TSS trigger is for use in triggering additional monitoring during blending events.	As specified in the study plan, but at least 180 days prior to permit expiration.

- b. **Effluent Characterization for Selected Constituents.** The Discharger shall monitor and evaluate the discharge from Discharge Point E-001 for all 126 priority pollutants in the CTR, according to its approved sampling plan submitted under the August 6, 2001 Letter. The Discharger shall conduct monitoring as specified in the MRP in Attachment E of this Order starting on the effective date of the permit. Compliance with this requirement shall be achieved in accordance with the specifications stated in the Regional Water Board's August 6, 2001 Letter under Effluent Monitoring for Major Dischargers.

The Discharger shall summarize the analytical results of the data collected to date and describe future monitoring to take place, based upon these results, in the annual report required by Part A of the Self-Monitoring Program (Attachment I). The first annual

report under this Order is due February 1, 2007, for the period from the effective date of this Order through December 31, 2006. A final report that presents all the data shall be submitted to the Board no later than 180 days prior to the permit expiration date. This final report shall be submitted with the application for permit reissuance. Reporting requirements under this section may be satisfied by: (a) monthly reporting using the electronic reporting system (ERS), or an equivalent electronic system required by the Regional Water Board or State Water Board, and (b) submittal of a complete application for permit reissuance no later than 180 days prior to the permit expiration date.

- c. **Ambient Background Receiving Water Monitoring.** The Discharger shall continue to collect or participate in collecting background ambient receiving water data with other dischargers and/or through the Regional Monitoring Program. This information is required to perform RPAs and to calculate effluent limitations. To fulfill this requirement, the Discharger shall submit (or cause to have submitted on its behalf) data sufficient to characterize the concentration of each toxic pollutant listed in the CTR in the ambient receiving water. The data on the conventional water quality parameters (pH, salinity, and hardness) shall also be sufficient to characterize these parameters in the ambient receiving water at a point after the discharge has mixed with the receiving waters. This provision may be met through monitoring through the Collaborative BACWA Study, or a similar ambient monitoring program for San Francisco Bay. This permit may be reopened, as appropriate, to incorporate effluent limits or other requirements based on Regional Water Board review of these data.

Final Report: The Discharger shall submit (or cause to have submitted on its behalf) a final report that presents all the data to the Regional Water Board 180 days prior to Order expiration. This final report shall be submitted with the application for permit reissuance.

- d. **Mare Island Strait Receiving Water Study.** The Discharger must perform a study during discharge events at Discharge Point E-002 to demonstrate compliance with the receiving water limitations of this Order and therefore the Basin Plan's water quality objectives. The Discharger may submit past monitoring data that is sufficient to assess compliance with the water quality objectives, and acceptable to the Executive Officer. Otherwise, the Discharger shall comply with the following tasks and deadlines.

Tasks	Compliance Date
(1.) <i>Study Plan.</i> The study plan shall outline data collection frequency and location for the purpose of demonstrating that discharges from Discharge Point E-002 comply with water quality objectives and receiving water limitations in this Order.	6 months following effective date of permit
(2) <i>Implementation of the Study Plan.</i> Upon approval by the Executive Officer, or after 45 days of the study plan submittal if the Executive Officer has not commented, the Discharger shall conduct the study plan.	As specified in the study plan.
(3) <i>Final Report.</i> The Discharger shall submit a report, acceptable to the Executive Officer. The report shall include an analysis of the sampling parameters as an indicator of compliance with water quality objectives and the receiving water limitations in this Order.	As specified in the study plan, but at least 180 days prior to permit expiration.

- e. **Mercury Mass Loading Reduction.** If mass loading for mercury exceeds the mass emission trigger level specified in Effluent Limitation IV.B of this Order, then the following actions shall be initiated by the Discharger:
- 1) *Notification:* Report any exceedance of the trigger specified in Effluent Limitation IV.B.2 to the Regional Water Board in accordance with Section V.E in Attachment D of this Order.
 - 2) *Identification of the problem:* Resample to verify the increase in loading. If resampling confirms that the mass loading trigger has been exceeded, determine whether the exceedance is flow or concentration-related. If the exceedance is flow related, identify whether it related to an increase in the number of sewer connections, increases in infiltration and inflow (I&I), wet season conditions, or unknown sources. If the exceedance is concentration-related, identify whether it is related to industrial, commercial, residential, or unknown sources.
 - 3) *Investigation of corrective action:* Investigate the feasibility of improving public education and outreach. Within 60 days after confirmed exceedance of trigger, develop a plan and include a time schedule as short as practicable, acceptable to the Executive Officer, to implement all reasonable actions to maintain mercury mass loadings at or below the mass loading trigger contained in Effluent Limitation IV.B.
 - 4) *Investigation of aggressive prevention/reduction measures.* In the event the exceedance is related to growth and the plan required under (3) above is not expected to keep mercury mass loadings below the mass loading trigger, submit a plan, acceptable to the Executive Officer. The plan should include an initiative to work with the local planning department to investigate the feasibility and potential benefits of requiring water conservation, reclamation, and dual plumbing for new development. This plan shall be implemented as soon as practicable.
- f. **Optional Mass Offset.** If the Discharger can demonstrate that further net reductions of the total mass loadings of the 303(d)-listed pollutants to the receiving water cannot be achieved through economically feasible measures such as aggressive source control, feasibility studies for wastewater reuse, and treatment plant optimization, but only through a mass offset program, the Discharger may submit to the Regional Water Board for approval a mass offset plan to reduce 303(d)-listed pollutants to the same watershed or drainage basin. The Regional Water Board may modify this Order to allow an approved mass offset program.

3. Best Management Practices and Pollution Prevention - Pollutant Minimization Program.

- 1) The Discharger shall continue to implement and improve, in a manner acceptable to the Executive Officer, its existing Pollutant Minimization Program to promote minimization of pollutant loadings of copper, mercury, and cyanide to the treatment plant and therefore to the receiving waters. The Discharger shall implement any applicable additional pollutant minimization measures described in the Basin Plan's

implementation requirements associated with the copper SSO and cyanide SSO if and when these SSOs become effective and the alternate limits take effect.

- 2) The Discharger shall submit an annual report on pollution prevention measures, acceptable to the Executive Officer, no later than August 30th of each year. Annual reports shall cover July through June of the preceding year. Annual report shall include at least the following information:
 - (a) *A brief description of its treatment facilities and treatment processes.*
 - (b) *A discussion of the current pollutants of concern.* Periodically, the Discharger shall analyze its own situation to determine which pollutants are currently a problem and/or which pollutants may be potential future problems. This discussion shall include the reasons why the pollutants were chosen.
 - (c) *Identification of sources for the pollutants of concern.* This discussion shall include how the Discharger intends to estimate and identify sources of the pollutants. The Discharger shall also identify sources or potential sources not directly within the ability or authority of the Discharger to control, such as pollutants in the potable water supply and air deposition.
 - (d) *Identification of tasks to reduce the sources of the pollutants of concern.* This discussion shall identify and prioritize tasks to address the Discharger's pollutants of concern. The Discharger may implement tasks itself or participate in group, regional, or national tasks that will address its pollutants of concern. The Discharger is strongly encouraged to participate in group, regional, or national tasks that will address its pollutants of concern whenever it is efficient and appropriate to do so. A time-line shall be included for the implementation of each task.
 - (e) *Outreach to employees.* The Discharger shall inform employees about the pollutants of concern, potential sources, and how they might be able to help reduce the discharge of these pollutants of concern into the treatment facilities. The Discharger may provide a forum for employees to provide input to the Program.
 - (f) *Discussion of criteria used to measure the program's and tasks' effectiveness.* The Discharger shall establish criteria to evaluate the effectiveness of its Pollutant Minimization Program. This shall also include a discussion of the specific criteria used to measure the effectiveness of each of the tasks in item 2)(c), 2)(d), and 2)(e).
 - (g) *Documentation of efforts and progress.* This discussion shall detail all the Discharger's activities in the Pollutant Minimization Program during the reporting year.
 - (h) *Evaluation of program's and tasks' effectiveness.* The Discharger shall use the criteria established in 2)(f). To evaluate the Program's and tasks' effectiveness.
 - (i) *Identification of Specific Tasks and Time Schedules for Future Efforts.* Based on the evaluation, the Discharger shall detail how it intends to continue or change its tasks to more effectively reduce the amount of pollutants to the treatment plant, and subsequently in its effluent.
- 3) The Discharger shall develop and conduct a Pollutant Minimization Program as further described below when there is evidence (e.g. sample results from analytical methods more sensitive than those methods required by this Order, presence of whole

effluent toxicity, results of benthic or aquatic organism tissue sampling) that a priority pollutant is present in the effluent above an effluent limitation and:

- (a) A sample result is reported as detected, but not quantified (DNQ) and the effluent limitation is less than the Reporting Level (RL); or,
- (b) A sample result is reported as not detected (less than the Method Detection Limit (MDL)) and the effluent limitation is less than the MDL using definitions in the SIP; or,
- (c) If you have RP for dioxins, and the dioxin TEQ exceeds the WQO (0.014 pg/L); then

the Discharger shall expand its existing Pollutant Minimization Program to include the priority pollutant.

- 4) If triggered by the reasons in 3) above and notified by the Executive Officer, the Discharger's Pollutant Minimization Program shall, within 6 months, also include the following:
 - (a) An annual review and semiannual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling, or alternative measures approved by the Executive Officer when it is demonstrated that source monitoring is unlikely to produce useful analytical data.
 - (b) Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system, or alternative measures approved by the Executive Officer when it is demonstrated that influent monitoring is unlikely to produce useful analytical data.
 - (c) Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation.
 - (d) Development of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy.
 - (e) An annual status report that shall be sent to the Regional Water Board including the following:
 - i. All Pollutant Minimization Program monitoring results for the previous year
 - ii. A list of potential sources of the reportable priority pollutant(s)
 - iii. A summary of all actions undertaken pursuant to the control strategy
 - iv. A description of actions to be taken in the following year.
- 5) To the extent that the requirements of the Pollutant Prevention Program and the Pollutant Minimization Program overlap, the Discharger is allowed to continue, modify, or expand its Pollution Prevention Program to satisfy the Pollutant Minimization Program requirements.
- 6) These Pollution Prevention/Pollutant Minimization Program requirements are not intended to fulfill the requirements in the Clean Water Enforcement and Pollution Prevention Act of 1999 (Senate Bill 709).

4. **Compliance Schedule.** This Order grants compliance schedules for mercury and cyanide, and alternate final limits for copper and cyanide. Pursuant to Section 2.1 of the SIP and Chapter 4 of the Basin Plan, the Discharger shall (a) conduct pollutant minimization in

accordance with Provision C.3., (b) participate in and support the development of a mercury TMDL, a dioxin-TEQ TMDL, a cyanide SSO, and a copper SSO. The Discharger shall submit an update to the Regional Water Board in the annual self-monitoring report to document its efforts toward development of these TMDL(s) and SSO(s). Regional Water Board staff shall review the status of TMDL development. In the event mercury TMDL(s) or cyanide SSO(s) are not developed by July 1, 2009, the Discharger shall submit by July 1, 2009, a schedule that documents how it will further reduce pollutant concentrations to ensure compliance with the final limits specified in Effluent Limitations and Discharge Specifications IV.A.1.a.

5. Construction, Operation and Maintenance Specifications

a. Wastewater Facilities, Review and Evaluation, and Status Reports

- 1) The Discharger shall operate and maintain its wastewater collection, treatment, and disposal facilities in a manner to ensure that all facilities are adequately staffed, supervised, financed, operated, maintained, repaired, and upgraded as necessary, in order to provide adequate and reliable transport, treatment, and disposal of all wastewater from both existing and planned future wastewater sources under the Discharger's service responsibilities.
- 2) The Discharger shall regularly review and evaluate its wastewater facilities and operation practices in accordance with section 1) above. Reviews and evaluations shall be conducted as an ongoing component of the Discharger's administration of its wastewater facilities.
- 3) The Discharger shall provide the Executive Officer, upon his or her request, a report describing the current status of its wastewater facilities and operation practices, including any recommended or planned actions and an estimated time schedule for these actions. The Discharger shall also include, in each annual self-monitoring report, a description or summary of review and evaluation procedures, and applicable wastewater facility programs or capital improvement projects.

b. Operations and Maintenance Manual (O&M), Review and Status Reports

- 1) The Discharger shall maintain an O & M Manual as described in the findings of this Order for the Discharger's wastewater facilities. The O & M Manual shall be maintained in usable condition, and available for reference and use by all applicable personnel.
- 2) The Discharger shall regularly review, revise, or update, as necessary, the O & M Manual(s) so that the document(s) may remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and revisions or updates shall be completed as necessary. For any significant changes in treatment facility equipment or operation practices, applicable revisions shall be completed within 90 days of completion of such changes.

- 3) The Discharger shall provide the Executive Officer, upon his or her request, a report describing the current status of its O&M manual, including any recommended or planned actions and an estimated time schedule for these actions. The Discharger shall also include, in each annual self-monitoring report, a description or summary of review and evaluation procedures, and applicable changes to, its operations and maintenance manual.

c. Contingency Plan, Review and Status Reports

- 1) The Discharger shall maintain a Contingency Plan as required by Regional Water Board Resolution 74-10 (Attachment I), and as prudent in accordance with current municipal facility emergency planning. The discharge of pollutants in violation of this Order where the Discharger has failed to develop and/or adequately implement a contingency plan will be the basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code.
- 2) The Discharger shall regularly review, and update as necessary, the Contingency Plan so that the plan may remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and updates shall be completed as necessary.
- 3) The Discharger shall provide the Executive Officer, upon his or her request, a report describing the current status of its contingency plan review and update. The Discharger shall also include, in each annual self-monitoring report, a description or summary of review and evaluation procedures, and applicable changes to, its contingency plan.

6. Special Provisions for Municipal Facilities (POTWs Only)

- a. Pretreatment Program.** The Discharger shall implement and enforce its approved pretreatment program in accordance with Federal Pretreatment Regulations (40 CFR 403), pretreatment standards promulgated under Section 307(b), 307(c), and 307(d) of the Clean Water Act, pretreatment requirements specified under 40 CFR 122.44(j) and in Pretreatment Requirements (Attachment H). The Discharger's responsibilities include, but are not limited to:
 - 1) Enforcement of National Pretreatment Standards (e.g. prohibited dischargers, Categorical Standards) in accordance with 40 CFR 403.5 and Section 307 (b) and (c) of the Clean Water Act.
 - 2) Implementation of its pretreatment program in accordance with legal authorities, policies, procedures, and financial provisions described in the General Pretreatment regulations (40 CFR 403) and the Discharger's approved pretreatment program.
 - 3) Submission of reports to US EPA, the State Water Board and the Regional Water Board as described in Pretreatment Requirements (Attachment H).

- 4) Evaluate the need to revise local limits under 40 CFR 403.5(c)(1); and within 180 days after the effective date of this Order, submit a report acceptable to the Executive Officer describing the changes with a plan and schedule for implementation. To ensure no significant increase in the discharge of copper, and thus compliance with antidegradation requirements, the Discharger shall not consider eliminating or relaxing local limits for copper in this evaluation.

The Discharger shall implement its approved pretreatment program and the program shall be an enforceable condition of this permit. If the Discharger fails to perform the pretreatment functions, the Regional Water Board, the State Water Board, or the US EPA may take enforcement actions against the Discharger as authorized by the Clean Water Act.

b. Biosolids Management Practices Requirements

- 1) All sludge generated by the Discharger must be disposed of in a municipal solid waste landfill, reused by land application, or disposed of in a sludge-only landfill in accordance with 40 CFR Part 503. If the Discharger desires to dispose of sludge by a different method, a request for permit modification must be submitted to the US EPA 180 days before start-up of the alternative disposal practice. All the requirements in 40 CFR 503 are enforceable by US EPA whether or not they are stated in an NPDES permit or other permit issued to the Discharger. The Regional Water Board should be copied on relevant correspondence and reports forwarded to the US EPA regarding sludge management practices.
- 2) Sludge treatment, storage and disposal or reuse shall not create a nuisance, such as objectionable odors or flies, or results in groundwater contamination.
- 3) The Discharger shall take all reasonable steps to prevent or minimize any sludge use or disposal which has a likelihood of adversely affecting human health or the environment.
- 4) The discharge of biosolids shall not cause waste material to be in a position where it is, or can be carried from the sludge treatment and storage site and deposited in the waters of the State.
- 5) The sludge treatment and storage site shall have facilities adequate to divert surface runoff from adjacent areas, to protect boundaries of the site from erosion, and to prevent any conditions that would cause drainage from the materials in the temporary storage site. Adequate protection is defined as protection from at least a 100-year storm and protection from the highest possible tidal stage that may occur.
- 6) For sludge that is applied to the land, placed on a surface disposal site, or fired in a biosolids incinerator as defined in 40 CFR 503, the Discharger shall submit an annual report to the US EPA and the Regional Water Board containing monitoring results and pathogen and vector attraction reduction requirements as specified by 40 CFR 503, postmarked February 15 of each year, for the period covering the previous calendar year.

- 7) Sludge that is disposed of in a municipal solid waste landfill must meet the requirements of 40 CFR 258. In the annual self-monitoring report, the Discharger shall include the amount of sludge disposed of, and the landfill(s) to which it was sent.
 - 8) Permanent on-site sludge storage or disposal activities are not authorized by this permit. A report of Waste Discharge shall be filed and the site brought into compliance with all applicable regulations prior to commencement of any such activity by the Discharger.
 - 9) Sludge Monitoring and Reporting Provisions of this Regional Water Board's "Standard Provisions, Monitoring and Reporting Requirements", dated March 2006, apply to sludge handling, disposal and reporting practices.
 - 10) The Regional Water Board may amend this permit prior to expiration if changes occur in applicable state and federal sludge regulations.
- c. **Sanitary Sewer Overflows and Sewer System Management Plan.** The Discharger's collection system is part of the facility that is subject to this Order. As such, the Discharge must properly operate and maintain its collection system (Attachment D, Standard Provisions - Permit Compliance, subsection I.D). The Discharger must report any noncompliance (Attachment D, Standard Provision - Reporting, subsections V.E.1 and V.E.2), and mitigate any discharge from the Discharger's collection system in violation of this Order (Attachment D, Standard Provisions - Permit Compliance, subsection I.C). The General Waste Discharge Requirements for Collection System Agencies (Order No. 2006-0003 DWQ) has requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. While the Discharger must comply with both the General Waste Discharge Requirements for Collection System Agencies (General Collection System WDR) and this Order, the General Collection System WDR more clearly and specifically stipulates requirements for operation and maintenance and for reporting and mitigating sanitary sewer overflows. Implementation of the General Collection System WDR requirements for proper operation and maintenance and mitigation of spills will satisfy the corresponding federal NPDES requirements specified in this Order. Following reporting requirements in the General Collection System WDR will satisfy NPDES reporting requirements for sewage spills. Furthermore, the Discharger shall comply with the schedule for development of sewer system management plans (SSMPs) as indicated in the letter issued by the Regional Water Board on July 7, 2005, pursuant to Water Code Section 13267. Until the statewide on-line reporting system becomes operational, the Discharger shall report sanitary sewer overflows electronically according to the Regional Water Board's SSO reporting program.
- d. **No Feasible Alternatives Analysis.** Prior to the Order expiration date, the Discharger shall conduct an utility analysis if the Discharger seeks to continue to employ peak wet weather diversions around secondary treatment units at the Facility. As application for issuance of new waste discharge requirements, the completed utility analysis must be included in the Report of Waste Discharge and permit reissuance application. The utility

analysis must contain all elements described in US EPA's Peak Wet Weather policy, part 1 of the No Feasible Alternatives Analysis Process, and at a minimum, should include any changes at the facility, progress made in relevant areas, any new circumstances, the timing of ongoing projects or construction, or I/I reduction schedules.

VII. COMPLIANCE DETERMINATION

Compliance with the effluent limitations contained in Section IV of this Order will be determined as specified below:

A. General.

Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined in the MRP and Attachment A of this Order. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

B. Multiple Sample Data.

When determining compliance with an AMEL, AWEL, or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

1. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
2. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

C. Average Monthly Effluent Limitation (AMEL).

If the average (or when applicable, the median determined by subsection B above for multiple sample data) of daily discharges over a calendar month exceeds the AMEL for a given parameter, this will represent a single violation, though the Discharger will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of non-compliance in a 31-day month). If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the AMEL, the Discharger will be considered out of compliance for that calendar month. The Discharger will only be considered out of compliance

for days when the discharge occurs. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month.

D. Average Weekly Effluent Limitation (AWEL).

If the average (or when applicable, the median determined by subsection B above for multiple sample data) of daily discharges over a calendar week exceeds the AWEL for a given parameter, this will represent a single violation, though the Discharger will be considered out of compliance for each day of that week for that parameter, resulting in 7 days of non-compliance. If only a single sample is taken during the calendar week and the analytical result for that sample exceeds the AWEL, the Discharger will be considered out of compliance for that calendar week. The Discharger will only be considered out of compliance for days when the discharge occurs. For any one calendar week during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar week.

E. Maximum Daily Effluent Limitation (MDEL).

If a daily discharge (or when applicable, the median determined by subsection B above for multiple sample data of a daily discharge) exceeds the MDEL for a given parameter, the Discharger will be considered out of compliance for that parameter for that 1 day only within the reporting period. For any 1 day during which no sample is taken, no compliance determination can be made for that day.

F. Instantaneous Minimum Effluent Limitation.

If the analytical result of a single grab sample is lower than the instantaneous minimum effluent limitation for a parameter, the Discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both are lower than the instantaneous minimum effluent limitation would result in two instances of non-compliance with the instantaneous minimum effluent limitation).

G. Instantaneous Maximum Effluent Limitation.

If the analytical result of a single grab sample is higher than the instantaneous maximum effluent limitation for a parameter, the Discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both exceed the instantaneous maximum effluent limitation would result in two instances of non-compliance with the instantaneous maximum effluent limitation).

ATTACHMENT A – DEFINITIONS

Average Monthly Effluent Limitation (AMEL): the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL): the highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Daily Discharge: Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

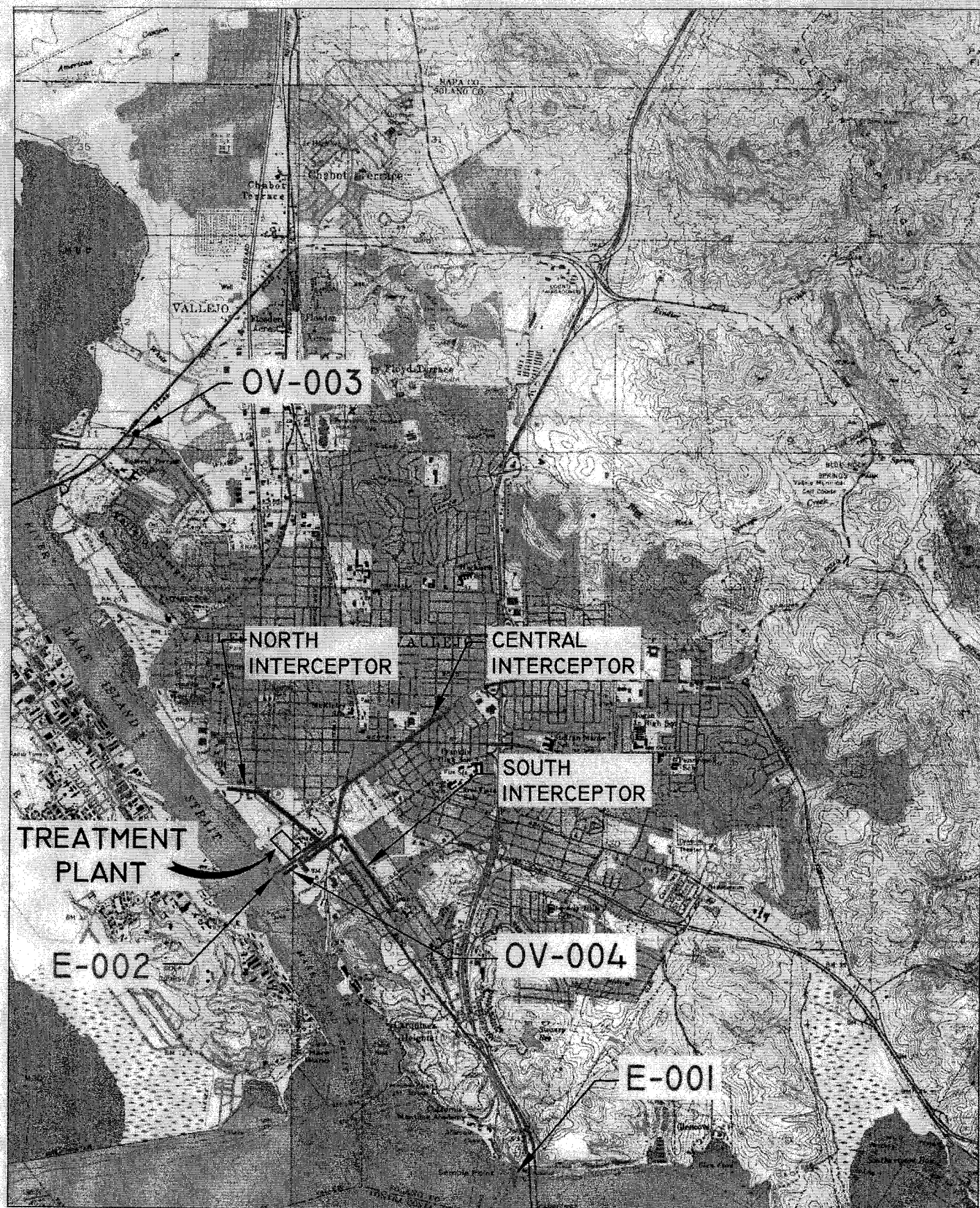
Instantaneous Maximum Effluent Limitation: the highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation: the lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Maximum Daily Effluent Limitation (MDEL): the highest allowable daily discharge of a pollutant.

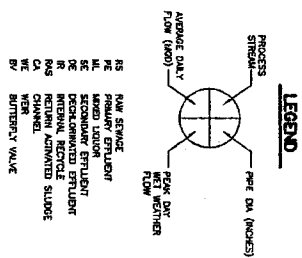
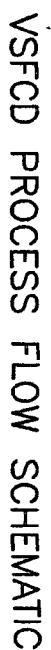
Six-month Median Effluent Limitation: the highest allowable moving median of all daily discharges for any 180-day period.

ATTACHMENT B – TOPOGRAPHIC MAP



- E-001 CARQUINEZ STRAIT DISCHARGE
- E-002 MARE ISLAND STRAIT DISCHARGE
- OV-003 SEARS POINT PUMP STATION OVERFLOW (NAPA RIVER)
- OV-004 RYDER STREET OVERFLOW (MARE ISLAND STRAIT)

ATTACHMENT C – FLOW SCHEMATIC



ATTACHMENT D – FEDERAL STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code (CWC) and is grounds for enforcement action, for permit termination, revocation and reissuance, or denial of a permit renewal application [40 CFR §122.41(a)].
2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not been modified to incorporate the requirement [40 CFR §122.41(a)(1)].

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order [40 CFR §122.41(c)].

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment [40 CFR §122.41(d)].

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order [40 CFR §122.41(e)].

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges [40 CFR §122.41(g)].
2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations [40 CFR §122.5(c)].

F. Inspection and Entry

The Discharger shall allow the Regional Water Quality Control Board (Regional Water Board), State Water Resources Control Board (SWRCB), United States Environmental Protection Agency (US EPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to [40 CFR §122.41(i)] [CWC 13383(c)]:

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order [40 CFR §122.41(i)(1)];
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order [40 CFR §122.41(i)(2)];
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order [40 CFR §122.41(i)(3)];
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the CWC, any substances or parameters at any location [40 CFR §122.41(i)(4)].

G. Bypass

1. Definitions
 - a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility [40 CFR §122.41(m)(1)(i)].
 - b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production [40 CFR §122.41(m)(1)(ii)].
2. Bypass not exceeding limitations – The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3 and I.G.5 below [40 CFR §122.41(m)(2)].
3. Prohibition of bypass – Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless [40 CFR §122.41(m)(4)(i)]:
 - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage [40 CFR §122.41(m)(4)(A)];

- b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance [40 CFR §122.41(m)(4)(B)]; and
 - c. The Discharger submitted notice to the Regional Water Board as required under Standard Provision – Permit Compliance I.G.5 below [40 CFR §122.41(m)(4)(C)].
4. The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above [40 CFR §122.41(m)(4)(ii)].
5. Notice
- a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass [40 CFR §122.41(m)(3)(i)].
 - b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below [40 CFR §122.41(m)(3)(ii)].

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation [40 CFR §122.41(n)(1)].

- 1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph H.2 of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review [40 CFR §122.41(n)(2)].
- 2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that [40 CFR §122.41(n)(3)]:
 - a. An upset occurred and that the Discharger can identify the cause(s) of the upset [40 CFR §122.41(n)(3)(i)];
 - b. The permitted facility was, at the time, being properly operated [40 CFR §122.41(n)(3)(ii)];

- c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b [40 CFR §122.41(n)(3)(iii)]; and
 - d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above [40 CFR §122.41(n)(3)(iv)].
3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof [40 CFR §122.41(n)(4)].

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition [40 CFR §122.41(f)].

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit [40 CFR §122.41(b)].

C. Transfers

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the CWC [40 CFR §122.41(l)(3)] [40 CFR §122.61].

III. STANDARD PROVISIONS – MONITORING

- A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity [40 CFR §122.41(j)(1)].
- B. Monitoring results must be conducted according to test procedures under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503 unless other test procedures have been specified in this Order [40 CFR §122.41(j)(4)] [40 CFR §122.44(i)(1)(iv)].

IV. STANDARD PROVISIONS – RECORDS

- A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at

least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time [40 CFR §122.41(j)(2)].

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements [40 CFR §122.41(j)(3)(i)];
2. The individual(s) who performed the sampling or measurements [40 CFR §122.41(j)(3)(ii)];
3. The date(s) analyses were performed [40 CFR §122.41(j)(3)(iii)];
4. The individual(s) who performed the analyses [40 CFR §122.41(j)(3)(iv)];
5. The analytical techniques or methods used [40 CFR §122.41(j)(3)(v)]; and
6. The results of such analyses [40 CFR §122.41(j)(3)(vi)].

C. Claims of confidentiality for the following information will be denied [40 CFR §122.7(b)]:

1. The name and address of any permit applicant or Discharger [40 CFR §122.7(b)(1)]; and
2. Permit applications and attachments, permits and effluent data [40 CFR §122.7(b)(2)].

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Regional Water Board, SWRCB, or USEPA within a reasonable time, any information which the Regional Water Board, SWRCB, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Regional Water Board, SWRCB, or USEPA copies of records required to be kept by this Order [40 CFR §122.41(h)] [CWC 13267].

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional Water Board, SWRCB, and/or USEPA shall be signed and certified in accordance with paragraph (2.) and (3.) of this provision [40 CFR §122.41(k)].
2. All permit applications shall be signed as follows:
 - a. For a corporation: By a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities,

- provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures [40 CFR §122.22(a)(1)];
- b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively [40 CFR §122.22(a)(2)]; or
 - c. For a municipality, State, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA) [40 CFR §122.22(a)(3)].
3. All reports required by this Order and other information requested by the Regional Water Board, SWRCB, or USEPA shall be signed by a person described in paragraph (b) of this provision, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
- a. The authorization is made in writing by a person described in paragraph (2.) of this provision [40 CFR §122.22(b)(1)];
 - b. The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company (a duly authorized representative may thus be either a named individual or any individual occupying a named position) [40 CFR §122.22(b)(2)]; and
 - c. The written authorization is submitted to the Regional Water Board, SWRCB, or USEPA [40 CFR §122.22(b)(3)].
4. If an authorization under paragraph (3.) of this provision is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (3.) of this provision must be submitted to the Regional Water Board, SWRCB or USEPA prior to or together with any reports, information, or applications, to be signed by an authorized representative [40 CFR §122.22(c)].
5. Any person signing a document under paragraph (2.) or (3.) of this provision shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations" [40 CFR §122.22(d)].

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program in this Order [40 CFR §122.41(l)(4)].
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or SWRCB for reporting results of monitoring of sludge use or disposal practices [40 CFR §122.41(l)(4)(i)].
3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board [40 CFR §122.41(l)(4)(ii)].
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order [40 CFR §122.41(l)(4)(iii)].

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date [40 CFR §122.41(l)(5)].

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance [40 CFR §122.41(l)(6)(i)].
2. The following shall be included as information that must be reported within 24 hours under this paragraph [40 CFR §122.41(l)(6)(ii)]:

- a. Any unanticipated bypass that exceeds any effluent limitation in this Order [40 CFR §122.41(l)(6)(ii)(A)].
 - b. Any upset that exceeds any effluent limitation in this Order [40 CFR §122.41(l)(6)(ii)(B)].
 - c. Violation of a maximum daily discharge limitation for any of the pollutants listed in this Order to be reported within 24 hours [40 CFR §122.41(l)(6)(ii)(C)].
3. The Regional Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours [40 CFR §122.41(l)(6)(iii)].

F. Planned Changes

The Discharger shall give notice to the Regional Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when [40 CFR §122.41(l)(1)]:

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR §122.29(b) [40 CFR §122.41(l)(1)(i)]; or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in this Order nor to notification requirements under 40 CFR Part 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1) [40 CFR §122.41(l)(1)(ii)].
3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan [40 CFR §122.41(l)(1)(iii)].

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Regional Water Board or SWRCB of any planned changes in the permitted facility or activity that may result in noncompliance with General Order requirements [40 CFR §122.41(l)(2)].

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting E.3, E.4, and E.5 at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E [40 CFR §122.41(l)(7)].

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Water Board, SWRCB, or USEPA, the Discharger shall promptly submit such facts or information [40 CFR §122.41(l)(8)].

VI. STANDARD PROVISIONS – ENFORCEMENT

- A. The CWA provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed \$25,000 per day for each violation. The CWA provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the Clean Water Act, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions [40 CFR §122.41(a)(2)] [CWC 13385 and 13387].
- B. Any person may be assessed an administrative penalty by the Regional Water Board for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000. Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000 [40 CFR §122.41(a)(3)].
- C. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon

conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both [40 CFR §122.41(j)(5)].

- D. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this Order, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both [40 CFR §122.41(k)(2)].

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Non-Municipal Facilities

Existing manufacturing, commercial, mining, and silvicultural dischargers shall notify the Regional Water Board as soon as they know or have reason to believe [40 CFR §122.42(a)]:

1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" [40 CFR §122.42(a)(1)]:
 - a. 100 micrograms per liter ($\mu\text{g/L}$) [40 CFR §122.42(a)(1)(i)];
 - b. 200 $\mu\text{g/L}$ for acrolein and acrylonitrile; 500 $\mu\text{g/L}$ for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony [40 CFR §122.42(a)(1)(ii)];
 - c. Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge [40 CFR §122.42(a)(1)(iii)]; or
 - d. The level established by the Regional Water Board in accordance with 40 CFR §122.44(f) [40 CFR §122.42(a)(1)(iv)].
2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" [40 CFR §122.42(a)(2)]:
 - a. 500 micrograms per liter ($\mu\text{g/L}$) [40 CFR §122.42(a)(2)(i)];
 - b. 1 milligram per liter (mg/L) for antimony [40 CFR §122.42(a)(2)(ii)];
 - c. Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge [40 CFR §122.42(a)(2)(iii)]; or

- d. The level established by the Regional Water Board in accordance with 40 CFR §122.44(f) [40 CFR §122.42(a)(2)(iv)].

B. Publicly-Owned Treatment Works (POTWs)

All POTWs shall provide adequate notice to the Regional Water Board of the following [40 CFR §122.42(b)]:

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to Sections 301 or 306 of the CWA if it were directly discharging those pollutants [40 CFR §122.42(b)(1)]; and
2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order [40 CFR §122.42(b)(2)].

Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW [40 CFR §122.42(b)(3)].

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations (CFR) at 40 CFR §122.48 requires that all NPDES permits specify monitoring and reporting requirements. CWC sections 13267 and 13383 also authorize the Regional Water Quality Control Board (Regional Water Board) to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements which implement the federal and California regulations.

I. GENERAL MONITORING PROVISIONS

- A.** The Discharger shall comply with the MRP for this Order as adopted by the Regional Water Board, and with all of the Self-Monitoring Program, Part A, adopted August 1993 (SMP, Attachment I of this Order). The MRP and SMP may be amended by the Executive Officer pursuant to US EPA regulations 40 CFR 122.62, 122.63, and 124.5. If any discrepancies exist between the MRP and SMP, the MRP prevails.
- B.** Sampling is required during the entire year when discharging. All analyses shall be conducted using current US EPA methods, or that have been approved by the US EPA Regional Administrator pursuant to 40 CFR 136.4 and 40 CFR 136.5, or equivalent methods that are commercially and reasonably available, and that provide quantification of sampling parameters and constituents sufficient to evaluate compliance with applicable effluent limits. Equivalent methods must be more sensitive than those specified in 40 CFR 136, must be specified in the permit, and must be approved for use by the Executive Officer, following consultation with the State Water Board's Quality Assurance Program. The Regional Water Board will find the Discharger in violation of the limitation if the discharge concentration exceeds the effluent limitation and the Reporting Level for the analysis for that constituent.
- C.** Minimum Levels. For compliance monitoring, analyses shall be conducted using the lowest commercially available and reasonably achievable detection levels. The objective is to provide quantification of constituents sufficient to allow evaluation of observed concentrations with respect to the Minimum Levels given below. All Minimum Levels are expressed as µg/L approximately equal to parts per billion (ppb).

According to the SIP, method-specific factors can be applied. In such cases, this additional factor must be applied in the computation of the Reporting Level. Application of such factors will alter the Reporting Level from the Minimum Level for the analysis. Dischargers are to instruct laboratories to establish calibration standards so that the Minimum Level value is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve. The table below indicates the highest minimum level that the Discharger's laboratory must achieve for calibration purposes.

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	A-001	At any point in the treatment facilities headworks at which all waste tributary to the treatment system is present, and preceding any phase of treatment.
E-001	E-001	At a point in the treatment facility, at which all waste tributary to the discharge outfall is present, is representative of the discharge, and at which point adequate disinfection is assured for the discharge to Carquinez Strait.
E-002	E-002	At a point in the treatment facility, at which all waste tributary to the discharge outfall is present, and is representative of the discharge to Mare Island Strait.
--	P-001 thru P-008	Land Observations: Points located at the corners and at midpoints along the perimeter (fence line) of the wastewater treatment facilities. (A sketch showing the locations of these stations will accompany each report).

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location – A-001

1. The Discharger shall monitor the influent to the Facility at A-001 as follows:

Parameter	Units ^[1]	Sample Type ^[2]	Minimum Sampling Frequency
Flow Rate ^[3]	MGD	Continuous	Daily
CBOD ₅	mg/L	C-24	Twice per week
Total Suspended Solids	mg/L	C-24	Twice per week

[1] Unit Abbreviations:

MGD = million gallons per day
mg/L = milligrams per liter

[2] Sample Type Abbreviations:

Continuous = Measured continuously, and recorded and reported daily
C-24 = 24-hour composite

[3] Flow: Daily flows shall be reported as average, maximum, and minimum flows; and flow rates shall be reported as maximum, and minimum, with times of occurrence.

2. Influent monitoring identified in the table above is the minimum required monitoring. Additional sampling and analyses may be required in accordance with section IX.A of this MRP, or Pollution Minimization/Source Control Program requirements.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location – E-001

1. The Discharger shall monitor treated wastewater at E-001 as follows (see also monitoring requirements in section X.B of this MRP):

Parameter	Units ^[1]	Sample Type ^[2]	Minimum Sampling Frequency
Flow Rate ^[3]	MGD	Continuous	Continuous
pH	Standard Units	Continuous	Continuous
Temperature	°C	Grab ^[4]	Once per day
Dissolved Oxygen	mg/L & percent saturation	Grab ^[4]	Once per day
CBOD ₅	mg/L	C-24	Twice per week
Total Suspended Solids	mg/L	C-24	Twice per week
Oil & Grease ^[5]	mg/L	Grab ^[4]	Monthly
Fecal Coliform ^[6]	MPN / 100 ml	Grab ^[4]	Twice per week
Chlorine Residual ^[7]	mg/L	Continuous	Continuous
Copper	µg/L	C-24	Monthly
Cyanide ^[8]	µg/L	Grab ^[4]	Monthly
Mercury ^[9]	µg/L & kg/month	C-24 or Grab ^[4]	Monthly
Acute Toxicity ^[10]	Percent Survival	C-24	Monthly
Chronic Toxicity ^[10]	TU _c	C-24	Quarterly
2,3,7,8-TCDD and congeners ^[11]	pg/L	Grab ^[4]	Three times per year (once in January, April, and July)
Tributyltin	µg/L	Grab ^[4]	Quarterly
August 6, 2001 Letter, Table 1 Selected Constituents (except those listed above), metals.	µg/L	C-24	Annually
August 6, 2001 Letter, Table 1 Selected Constituents (except those listed above), organics.	µg/L	Grab ^[4]	Once during permit term
Standard Observations	--	--	Monthly

[1] Unit Abbreviations:

MGD = million gallons per day
°C = degree Celsius
MPN/ 100 ml = Most Probable Number per 100 milliliters
mg/L = milligrams per liter
pg/L = picograms per liter
µg/L = micrograms per liter
kg/month = kilograms per month
TU_c = chronic toxicity unit

[2] Sample Type Abbreviations:

Continuous = Measured continuously, and recorded and reported daily
C-24 = 24-hour composite

[3] Flow Monitoring: Effluent flow shall be measured continuously and recorded daily, and the following information shall also be reported monthly:

Daily Flow (MG)
Average Daily Flow (MGD)
Maximum Daily Flow (MGD)
Minimum Daily Flow (MGD)
Total Flow Volume (MG)

Reporting requirements under this section may be satisfied by monthly reporting using the electronic reporting system (ERS), or an equivalent electronic system required by the Regional Water Board or State Water Board.

- [4] Grab Samples shall be collected coincident with composite samples collected for the analysis of regulated parameters.
- [5] Oil & Grease Monitoring: Each Oil & Grease sample event shall consist of a composite sample comprised of three grab samples taken at equal intervals during the sampling date, with each grab sample being collected in a glass container. Each glass container used for sample collection or mixing shall be thoroughly rinsed with solvent rinsing as soon as possible after use, and the solvent rinsing shall be added to the composite sample for extraction and analysis.
- [6] Fecal Coliform: When replicate analyses are made of a fecal coliform sample, the reported result shall be the arithmetic mean of the samples.
- [7] Chlorine Residual: Chlorine residual shall be monitored continuously or, at a minimum, every hour. The Discharger shall report, on a daily basis, both maximum and minimum concentrations, for samples taken both prior to, and following dechlorination. If continuous monitoring is used, the Discharger may record discrete readings from the continuous monitoring every hour on the hour, and report, on a daily basis, the maximum concentration observed following dechlorination. Total chlorine dosage (kg/day) shall be recorded on a daily basis.
- [8] Cyanide: Compliance may be demonstrated by measurement of weak acid dissociable cyanide.
- [9] Mercury: Use ultra-clean sampling (USEPA 1669) to the maximum extent practicable, and ultra-clean analytical methods (USEPA 1631) for mercury monitoring.
- [10] Whole Effluent Toxicity: Whole effluent toxicity testing shall be performed in accordance with Section V. of this MRP.
- [11] 2,3,7,8-TCDD and congeners: Chlorinated Dibenzodioxins and Chlorinated Dibenzofurans shall be analyzed using the latest version of US EPA Method 1613; the analysis shall be capable of achieving one half the US EPA method 1613 Minimum Levels. Alternative methods of analysis must be approved by the Executive Officer. In addition to reporting results for each of the 17 congeners, the TCDD TEQ shall be calculated and reported using 1998 US EPA Toxicity Equivalent Factors for dioxin and furan congeners.

B. Monitoring Location – E-002

The Discharger shall monitor treated wastewater at E-002 as follows (see also monitoring requirements in section X.B of this MRP):

Parameter	Units ^[1]	Sample Type ^[2]	Minimum Sampling Frequency ^[3]
Flow Rate ^[4]	MGD	Continuous	Daily
Standard Observations	--	--	Once per day

[1] Unit Abbreviations:

MGD = million gallons per day

[2] Sample Type Abbreviations:

Continuous = Measured continuously, and recorded and reported daily

[3] Sampling Frequency:

Daily = Monitor required during discharge events only.

[4] Flow Monitoring: Effluent flow shall be measured continuously and recorded daily, and the following information shall also be reported monthly:

Daily Flow (MG)

Average Daily Flow (MGD)

Maximum Daily Flow (MGD)

Minimum Daily Flow (MGD)

Total Flow Volume (MG)

Reporting requirements under this section may be satisfied by monthly reporting using the electronic reporting system (ERS), or an equivalent electronic system required by the Regional Water Board or State Water Board.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Whole Effluent Acute Toxicity

Compliance with whole effluent acute toxicity requirements of this Order shall be achieved in accordance with the following:

1. Acute toxicity effluent limits shall be evaluated by measuring survival of test organisms exposed to 96-hour flow through bioassays;
2. Test organism shall be rainbow trout unless specified otherwise in writing by the Executive Officer; and
3. All bioassays shall be performed according to 40 CFR 136, currently the "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms", 5th Edition. Exceptions may be granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).

B. Whole Effluent Chronic Toxicity

1. The previous permit required the Discharger to perform chronic toxicity screening to identify the most sensitive species to perform toxicity testing. The Discharger completed the chronic toxicity screening study in November 2000, and the Executive Officer approved that the Discharger perform toxicity testing on Red Abalone (*Haliotis rufescens*) for compliance determination. Compliance with this Order retains that requirement to perform critical life stage toxicity test(s) on Red Abalone (*Haliotis rufescens*).
2. The Discharger shall conduct toxicity tests dilution series at 5%, 10%, 25%, 50%, and 67% or higher. The "%" represents percent effluent as discharged.
3. The Discharger shall also conduct chronic toxicity screening under either of the following conditions:
 - a. Subsequent to any significant change in the nature of the treatment plant effluent through changes in sources or treatment, except those changes resulting from reduction in pollutant concentrations attributable to pretreatment, source control, and waste minimization efforts; or,
 - b. Prior to permit reissuance.
4. Chronic Toxicity Monitoring Screening Phase Requirements for chronic toxicity screening testing, Critical Life Stage Toxicity Tests, and definitions of terms used in the chronic toxicity monitoring are identified in Attachment G of this Order.

C. Chronic Toxicity Reporting Requirements

1. Routine Reporting: Toxicity test results for the current reporting period shall include the following, at a minimum, for each test:
 - a. Sample date(s)
 - b. Test initiation date
 - c. Test species
 - d. End point values for each dilution (e.g., number of young, growth rate, percent survival)

- e. NOEC value(s) in percent effluent
 - f. IC₁₅, IC₂₅, IC₄₀, and IC₅₀ values (or EC₁₅, EC₂₅ ... etc.) in percent effluent
 - g. TUC values (100/NOEC, 100/IC₂₅, and 100/EC₂₅)
 - h. Mean percent mortality (\pm s.d.) after 96 hours in 100% effluent (if applicable)
 - i. NOEC and LOEC values for reference toxicant test(s)
 - j. IC₅₀ or EC₅₀ value(s) for reference toxicant test(s)
 - k. Available water quality measurements for each test (i.e., pH, D.O., temperature, conductivity, hardness, salinity, ammonia)
2. **Compliance Summary:** The results of the chronic toxicity testing shall be provided in the most recent self-monitoring report and shall include a summary table of chronic toxicity data from at least three of the most recent samples. The information in the table shall include the items listed above under VI.C, items a, c, e, f (IC₂₅ or EC₂₅), g, and h.

D. Chronic Toxicity Reduction Evaluation (TRE)

1. **Generic TRE Work Plan.** In order to be prepared for responding to toxicity events, the Discharger shall prepare a generic TRE work plan within 120 days of the effective date of this Order. The Discharger shall review and update the work plan as necessary in order to remain current and applicable to the discharge and discharge facility.
2. **Specific TRE Work Plan.** Within 30 days of exceeding either trigger for accelerated monitoring, the Discharger shall submit to the Regional Water Board a TRE work plan, which should be the generic work plan revised as appropriate for this toxicity event after consideration of available data.
3. **Initiate TRE.** Within 30 days of the date of completion of the accelerated monitoring test observed to exceed either trigger, the Discharger shall initiate a TRE in accordance with a TRE work plan that incorporates any and all comments for the Executive Officer.
4. The TRE shall be specific to the discharge, and be in accordance with current technical guidance and reference materials including US EPA guidance materials. The TRE shall be conducted as a tiered evaluation process, such as summarized below:
 - a. Tier 1 consists of basic data collection (routine and accelerated monitoring).
 - b. Tier 2 consists of evaluation of optimization of the treatment process including operation practices, and in-plant process chemicals.
 - c. Tier 3 consists of a toxicity identification evaluation (TIE).
 - d. Tier 4 consists of evaluation of options for additional effluent treatment processes.
 - e. Tier 5 consists of evaluation of options for modifications of in-plant treatment processes.

- f. Tier 6 consists of implementation of selected toxicity control measures, as well as follow-up monitoring and confirmation of implementation success.
5. The TRE may be ended at any stage if monitoring finds there is no longer consistent toxicity.
6. The objective of the TIE shall be to identify the substance or combination of substances causing the observed toxicity. All reasonable efforts using currently available TIE methodologies should be employed.
7. As toxic substances are identified or characterized, the Discharger shall continue the TRE by determining the source(s) and evaluating alternative strategies for reducing or eliminating the substances from the discharge. All reasonable steps shall be taken to reduce toxicity to levels consistent with chronic toxicity evaluation parameters.
8. Many recommended TRE elements parallel required or recommended efforts of source control, pollution prevention, and storm water control programs. TRE efforts should be coordinated with such efforts. To prevent duplication of efforts, evidence of compliance with requirements or recommended efforts of such programs may be acceptable to comply with TRE requirements.
9. The Regional Water Board recognizes that chronic toxicity may be episodic and identification of the causes and reduction of sources of chronic toxicity may not be successful in all cases. Consideration of enforcement action by the Regional Water Board will be based in part on the Discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.

VI. LAND DISCHARGE MONITORING REQUIREMENTS – N/A

VII. RECLAMATION MONITORING REQUIREMENTS – N/A

VIII. RECEIVING WATER MONITORING REQUIREMENTS – N/A

IX. OTHER MONITORING REQUIREMENTS

A. Pretreatment Program Monitoring - A-001, E-001, and B-001

The Discharger shall comply with the pretreatment requirements as follows for both influent (A-001), effluent (E-001), and biosolids (B-001):

Constituents	Sample Locations and Frequency		
	Influent A-001	Effluent E-001	Biosolids (B-001)
VOC	Twice per year	Twice per year	Twice per year
BNA	Twice per year	Twice per year	Twice per year
Metals ^[1]	Monthly	Monthly	Twice per year

[1] The parameters are arsenic, cadmium, selenium, copper, lead, mercury, nickel, silver, zinc, cyanide, and total chromium if the Discharger elects to substitute total chromium for hexavalent chromium.

For mercury, the Discharger may, as its option, sample effluent mercury either as grab or as 24-hour composite samples. The Discharger shall use ultra-clean sampling (USEPA 1669) to the maximum extent practicable, and ultra-clean analytical methods (USEPA 1631) for mercury monitoring.

B. Land Observances - P-001 thru P-008

The Discharger shall observe the periphery of the waste treatment or disposal facilities at equidistant intervals, not to exceed 200 feet at P-001 thru P-008 as follows:

Constituent	Units	Sample Type	Minimum Sampling Frequency
Standard Observations	--	Observation	Monthly

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachments D and I) related to monitoring, reporting, and recordkeeping.

B. Modifications to Part A of Self-Monitoring Program (Attachment I)

1. If any discrepancies exist between SMP Part A, August 1993 (Attachment I) and this MRP, this MRP prevails.
2. Section C.2.h of Part A shall be amended as follows:

- h. When any type of bypass occurs, except for bypasses that are consistent with Prohibition III.C of this Order, composite samples shall be collected on a daily basis for all constituents at all affected discharge points that have effluent limits for the duration of the bypass.

When bypassing occurs from any treatment process (primary, secondary, chlorination, dechlorination, etc.) in the Facility that is consistent with Prohibition III.C of this Order, during high wet weather inflow, the self-monitoring program shall include the following sampling and analyses, in addition to the schedule given in this MRP:

- i. When bypassing occurs from any primary or secondary treatment unit(s), samples of the discharge shall be collected for the duration of the bypass event for TSS analysis in 24-hour composite or less increments, and continuous monitoring of flow, chlorine residual, and grabs for pH and coliform. Samples in accordance with proper sampling techniques for all other limited pollutant parameters shall also be collected and retained for analysis if necessary. If a daily TSS value exceeds the weekly average effluent limit, analysis of the retained samples shall be conducted for all pollutant constituents that have effluent limits, except toxicity, for the duration of the bypass event. Holding times for these retained samples must be complied with.
 - ii. When bypassing the chlorination process, grab samples shall be collected at least daily for fecal coliform analyses; and continuous monitoring of flow.
 - iii. When bypassing the dechlorination process, grab samples shall be collected hourly for chlorine residual; and continuous monitoring of flow.
3. Sections C.3. and C.5. are satisfied by participation in the Regional Monitoring Program.

4. Modify Section F.1 as follows:

Spill Reports

A report shall be made of any spill of oil or other hazardous material. The spill shall be reported by telephone as soon as possible and no later than 24 hours following occurrence or discharger's knowledge of occurrence. Spills shall be reported by telephone as follows:

During weekdays, during office hours of 8 am to 5 pm, to the Regional Water Board: (510) 622 - 2300, (510) 622-2460 (FAX).

During non-office hours, to the State Office of Emergency Services:

Current telephone number: (800) 852-7550.

A report shall be submitted to the Regional Water Board within five (5) working days following telephone notification, unless directed otherwise by Regional Water Board staff. A report submitted by facsimile transmission is acceptable for this reporting. The written report shall contain information relative to:

5. Modify Section F.2 (first paragraph) as follows:

Reports of Plant Bypass, Treatment Unit Bypass and Order Violation

The following requirements apply to all treatment plant bypasses and significant non-compliance occurrences, except for bypasses under the conditions contained in 40 CFR Part 122.41 (m)(4) as stated in Standard Provision A.13. In the event the Discharger violates or threatens to violate the conditions of the waste discharge requirements and prohibitions or intends to experience a plant bypass or treatment unit bypass due to:

[And add at the end of Section F.2 the following:]

The Discharger shall report in monthly and annual monitoring reports occurrence of blending events, their duration and certify that the blending was in compliance with effluent limits and O&M Plans.

6. Modify Section F.4 as follows:

Self-Monitoring Reports

For each calendar month, a self-monitoring report (SMR) shall be submitted to the Regional Water Board in accordance with the requirements listed in Self-Monitoring Program, Part A. The purpose of the report is to document treatment performance, effluent quality and compliance with waste discharge requirements prescribed by this Order, as demonstrated by the monitoring program data and the Discharger's operation practices.

[And add at the end of Section F.4 the following:]

- g. If the Discharger wishes to invalidate any measurement, the letter of transmittal will include: a formal request to invalidate the measurement; the original measurement in

question; the reason for invalidating the measurement; all relevant documentation that supports the invalidation (e.g., laboratory sheet, log entry, test results, etc.); and discussion of the corrective actions taken or planned (with a time schedule for completion), to prevent recurrence of the sampling or measurement problem. The invalidation of a measurement requires the approval of Regional Water Board staff, and will be based solely on the documentation submitted at this time.

- h. The Discharger has the option to submit all monitoring results in an electronic reporting format approved by the Executive Officer. The ERS format includes, but is not limited to, a transmittal letter, summary of violation details and corrective actions, and transmittal receipt. If there are any discrepancies between the ERS requirements and the "hard copy" requirements listed in the SMP, then the approved ERS requirements supersede.

7. Add at the end of Section F.5, Annual Reporting, the following:

- d. A plan view drawing or map showing the Discharger's facility, flow routing and sampling and observation station locations.

8. Add as Section F.6 the following:

Reports of Wastewater Overflows

Overflows of sewage from the Discharger's collection system, other than overflows specifically addressed elsewhere in this Order and SMP, shall be reported to the Regional Water Board in accordance the Regional Water Board's letter dated November 15, 2004.

9. Amend Section E as Follows:

Recording Requirements – Records to be Maintained

Written reports, electronic records, strip charts, equipment calibration and maintenance records, and other records pertinent to demonstrating compliance with waste discharge requirements including SMP requirements, shall be maintained by the Discharger in a manner and at a location (e.g., wastewater treatment plant or discharger offices) such that the records are accessible to Regional Water Board staff. These records shall be retained by the Discharger for a minimum of 3 years. The minimum period of retention shall be extended during the course of any unresolved litigation regarding the subject discharges, or when requested by the Regional Water Board or by the Regional Administrator of US EPA, Region IX.

Records to be maintained shall include the following:

a) **Parameter Sampling and Analyses, and Observations**

For each sample, analysis, or observation conducted, records shall include the following:

- i. Identity of the parameter.
- ii. Identity of the sampling or observation station, consistent with the station descriptions given in this SMP.

- iii. Date and time of the sampling or observation.
- iv. Method of sampling (grab, composite, other method).
- v. Date and time the analysis was started and completed, and name of personnel or contract laboratory performing the analysis.
- vi. Reference or description of the procedure(s) used for sample preservation and handling, and analytical method(s) used.
- vii. Calculations of results.
- viii. Analytical method detection limits and related quantitation parameters.
- ix. Results of the analyses or observations.

b) Flow Monitoring Data

For all required flow monitoring (e.g., influent and effluent flows), records shall include the following:

- i. Total flow or volume for each day.
- ii. Maximum, minimum, and average daily flows for each calendar month.

c) Wastewater Treatment Process Solids

- i. For each treatment unit process that involves solid removal from the wastewater stream, records shall include the following:
 - 1). Total volume and/or mass quantification of solids removed from each unit (e.g., grit, skimmings, undigested sludge), for each calendar month
 - 2). Final disposition of such solids (e.g., landfill, other subsequent treatment unit).
- ii. For final dewatered sludge from the treatment plant as a whole, records shall include the following:
 - 1). Total volume and/or mass quantification of dewatered sludge, for each calendar month.
 - 2). Solids content of the dewatered sludge.
 - 3). Final disposition of dewatered sludge (point of disposal location and disposal method).

d) Disinfection Process

For the disinfection process, records shall be maintained documenting process operation and performance, including the following:

- i. For bacteriological analyses:
 - 1). Date and time of each sample collected.
 - 2). Wastewater flow rate at the time of the sample collection.
 - 3). Results of the sample analyses (coliform count).

- 4). Required statistical parameters of cumulative coliform values (e.g., moving the median or geometric mean for a number of samples or the sampling period identified in waste discharge requirements).

e) Treatment Process Bypasses

A chronological log of all treatment process bypasses, other than wet weather bypasses addressed elsewhere in this Order and SMP, shall include the following:

- i. Identification of the treatment process bypassed.
- ii. Date(s) and times of bypass beginning and end.
- iii. Total bypass duration.
- iv. Estimated total volume.
- v. Description of, or reference to other report(s) describing, the bypass event, the cause, corrective actions taken, and any additional monitoring conducted.

C. Additions to Part A of Self-Monitoring Program (Attachment I)

Reporting Data in Electronic Format:

The Discharger has the option to submit all monitoring results in electronic reporting format approved by the Executive Officer. If the Discharger chooses to submit the SMRs electronically, the following shall apply:

1. *Reporting Method:* The Discharger shall submit SMRs electronically via the process approved by the Executive Officer in a letter dated December 17, 1999, Official Implementation of Electronic Reporting System (ERS).
2. *Modification of reporting requirements:* Reporting requirements F.4 in the attached *Self-Monitoring program, Part A*, dated August 1993, shall be modified as follows. In the future, the Regional Water Board intends to modify Part A to reflect these changes.
3. *Monthly Report Requirements:* For each calendar month, a self-monitoring report (SMR) shall be submitted to the Regional Water Board in accordance with the following:
 - a. The report shall be submitted to the Regional Water Board no later than 30 days after the end of each calendar month.
 - b. *Letter of Transmittal:* Each report shall be submitted with a letter of transmittal. This letter shall include the following:
 - 1) Identification of all violations of effluent limits or other discharge requirements found during the monitoring period;
 - 2) Details of the violations: parameters, magnitude, test results, frequency, and dates;
 - 3) The cause of the violations;
 - 4) Discussion of corrective actions taken or planned to resolve violations and prevent recurrence, and dates or time schedule of action implementation. If previous reports have been submitted that address corrective actions, reference to such reports is satisfactory;

- 5) If the Discharger wishes to invalidate any measurement, the letter of transmittal will include: a formal request to invalidate the measurement; the original measurement in question; the reason for invalidating the measurement; all relevant documentation that supports the invalidation (e.g., laboratory sheet, log entry, test results, etc.); and discussion of the corrective actions taken or planned (with a time schedule for completion), to prevent recurrence of the sampling or measurement problem. The invalidation of a measurement requires the approval of Regional Water Board staff, and will be based solely on the documentation submitted at this time.
- 6) Signature: The letter of transmittal shall be signed by the Discharger's principal executive officer or ranking elected official, or duly authorized representative, and shall include the following certification statement:

"I certify under penalty of law that this document and all attachments have been prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

- 7) Compliance evaluation summary: Each report shall include a compliance evaluation summary. This summary shall include the number of samples in violation of applicable effluent limits.
- 8) Results of analyses and observations.
- 9) Tabulations of all required analyses and observations, including parameter, sample date, sample station, and test result.
- 10) If any parameter is monitored more frequently than required by this permit and SMP, the results of this additional monitoring shall be included in the monitoring report, and the data shall be included in data calculations and compliance evaluations for the monitoring period.
- 11) Calculations for all effluent limits that require averaging of measurements shall utilize an arithmetic mean, unless specified otherwise in this permit or SMP.

D. Self Monitoring Reports (SMRs)

1. At any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit self-monitoring reports. Until such notification is given, the Discharger shall submit self-monitoring reports in accordance with the requirements described below.
2. The Discharger shall submit monthly and annual Self Monitoring Reports including the results of all required monitoring using US EPA-approved test methods or other test methods specified in this Order. Monthly reports shall be due 30 days after the end of each calendar month. Annual reports shall be due on February 1 following each calendar year.
3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
Continuous (Daily)	Effective date of permit	All	First day of second calendar month following month of sampling
Once per day	Effective date of permit	Any 24-hour period that reasonably represents a calendar day for purposes of sampling.	First day of second calendar month following month of sampling
Twice per week	Effective date of permit	Sunday through Saturday	First day of second calendar month following month of sampling
Monthly	Effective date of permit	1 st day of calendar month through last day of calendar month	First day of second calendar month following month of sampling
Quarterly	Effective date of permit	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	May 1 August 1 November 1 February 1
Annually, Twice per year, or Three times per year	Effective date of permit	January 1 through December 31	February 1

4. The Discharger shall report with each sample result the applicable Minimum Level (ML) or Reporting Level (RL) and the current Method Detection Limit (MDL), as determined by the procedure in 40 CFR Part 136.

The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

- Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
- Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (+ a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

- Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.
- The Discharger shall instruct laboratories to establish calibration standards so that the RL value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. The Discharger shall not use analytical data derived from *extrapolation* beyond the lowest point of the calibration curve.

5. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the Facility is operating in compliance with interim and/or final effluent limitations.
6. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDRs; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.
7. SMRs must be submitted to the Regional Water Board, signed and certified as required by the Standard Provisions (Attachment D), to the address listed below:

San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612
Attn: NPDES Division

8. The Discharger has the option to submit all monitoring results in an electronic reporting format approved by the Executive Officer. The Electronic Reporting System (ERS) format includes, but is not limited to, a transmittal letter, summary of violation details and corrective actions, and transmittal receipt. If there are any discrepancies between the ERS requirements and the "hard copy" requirements listed in the MRP, then the approved ERS requirements supersede.

E. Discharge Monitoring Reports (DMRs)

1. As described in Section X.D.1 above, at any time during the term of this permit, the State or Regional Water Board may notify the discharger to electronically submit self-monitoring reports. Until such notification is given, the Discharger shall submit discharge monitoring reports (DMRs) in accordance with the requirements described below.
2. DMRs must be signed and certified as required by the Standard Provisions (Attachment D). The Discharge shall submit the original DMR and one copy of the DMR to the address listed below:

State Water Resources Control Board
Discharge Monitoring Report Processing Center
Post Office Box 671
Sacramento, CA 95812

3. All discharge monitoring results must be reported on the official US EPA pre-printed DMR forms (EPA Form 3320-1). Forms that are self-generated or modified cannot be accepted.

F. Other Reports – N/A

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ATTACHMENT F – FACT SHEET

As described in Section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the Facility.

WDID	2 482012001
Discharger	Vallejo Sanitation and Flood Control District
Name of Facility	Vallejo Sanitation and Flood Control District Wastewater Treatment Plant and its collection system
Facility Address	450 Ryder Street
	Vallejo, CA 94590
	Solano County
Facility Contact, Title, & Phone	Barry Pomeroy, Director of Operations and Maintenance, (707) 644-8949
Authorized Person to Sign and Submit Reports	Ronald J. Matheson, District Manager, (707) 644-8949
Mailing Address	Same
Billing Address	Same
Type of Facility	POTW
Major or Minor Facility	Major
Threat to Water Quality	I
Complexity	A
Pretreatment Program	Y
Reclamation Requirements	N/A
Facility Permitted Flow	15.5 million gallons per day, Maximum Dry Weather Flow
Facility Design Flow	15.5 million gallons per day (mgd), Average Dry Weather Flow 42.4 mgd, maximum daily flow rate during the years 2002 - 2004
Watershed	San Pablo Basin
Receiving Water	Carquinez and Mare Island Straits
Receiving Water Type	Estuarine

- A. Vallejo Sanitation and Flood Control District (hereinafter Discharger) is the owner and operator of the Vallejo Sanitation and Flood Control District Wastewater Treatment Plant (hereinafter Facility), a publicly owned treatment works (POTW).
- B. The Facility discharges wastewater to Carquinez (E-001) and Mare Island (E-002) Straits, waters of the United States, and is currently regulated by Order No. 00-026, which was adopted on April 19, 2000, and amended on February 1, 2003, (No. R2-2003-008), and expired on April 19, 2005. The terms of the previous permit automatically continued in effect after the permit expiration date.
- C. The Discharger filed a report of waste discharge and submitted an application for renewal of its Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit on October 4, 2004.

II. FACILITY DESCRIPTION

A. Description of Wastewater and Biosolids Treatment or Controls

1. The Facility provides secondary level treatment of wastewater from domestic and commercial sources within the City of Vallejo, a small amount of adjacent unincorporated area, and the former Mare Island Naval Facility. The Discharger's service area has a present population of about 117,000. The plant has an average dry weather design capacity of 15.5 million gallons per day (mgd), and a wet weather capacity of 35 mgd for full secondary treatment with an additional 25 mgd capacity for primary treatment. The total maximum wet weather daily plant flow is 60 million gallons. Actual average dry weather flow is 10.8 mgd. The maximum daily wet weather flow in 2005 was 57.9 mgd.
2. When wet weather flows exceed 30 mgd, treated effluent is discharged through both the Carquinez Strait (CS) outfall and the Ryder Street Wet Weather (RSWW) outfall, using an automated split flow process. Discharges from the RSWW outfall are to Mare Island Strait, and are equal in volume to the amount of the total plant flow that exceeds the CS outfall capacity. By means of automated flow splitting, the discharges to Mare Island Strait consist of only fully secondary-treated, disinfected, dechlorinated effluent, while the discharges through the CS outfall may consist of a disinfected blend of primary and secondary treated effluents. The purpose of the split flow process is to minimize potential receiving water impacts. The discharges to Carquinez Strait receive greater initial dilution than the discharges to Mare Island Strait. With the split flow process, discharges to Mare Island Strait consist of only the highest quality effluent, in the least volume necessary.
3. The treatment process consists of screening, aerated grit removal, primary sedimentation by circular and rectangular clarifiers, biological treatment using a trickling filter/solids contact process, secondary clarification, disinfection by sodium hypochlorite, and dechlorination by sodium bisulfite. Supplemental disinfection may be provided by ultra violet light.
4. During the term of the previous permit, the Discharger added a fourth primary clarifier, a primary influent magnetic flow meter, and increased the intermediate pump motor size to control and balance diversion flows over 30 mgd. In addition, two odor control soil biofilters were added to the Facility's treatment system.
5. Solids removed from the wastewater stream are treated by lime stabilization, gravity thickening and dewatering by belt filter presses. Stabilized, dewatered biosolids are hauled away for off-site disposal through land application at the Discharger's Biosolids Utilization Project on Tubbs Island, Sonoma County. Biosolids are temporarily stockpiled at the Tubbs Island site, and subsequently spread and incorporated into the soil as a soil amendment on land that is used for agricultural crop production. The District's Biosolids Utilization Project is regulated by US EPA under the 40 CFR 503 regulations.
6. The Discharger's wastewater collection system includes about 387 miles of sanitary sewer lines, and 35 pump stations. The Discharger has an ongoing program of maintenance and capital improvements for these sewer lines and pump stations in order to ensure adequate

capacity and reliability of the collection system. The Discharger's interceptor system includes two wet weather overflow structures, namely the Sears Point Pump Station Overflow and the Ryder Street Overflow. The Discharger states that these overflow structures reduce public exposure and potential public health threats by providing a controlled overflow point, thereby minimizing multiple overflows that would otherwise occur at various locations from collection system manholes in residential neighborhoods in the collection system area. During the past five years, there were no overflows at the Ryder Street overflow, and one wet weather overflow at the Sears Point Pump Station.

7. In 1988, the Discharger initiated a program to manage its Sanitary Sewer Overflows (SSOs) in a cost-effective manner to protect public health and water quality. The 1988 program was based on Sanitary Sewer Overflow (SSO) analysis standards and utilized a design storm approach. In 1999-2000, the Discharger accelerated the SSO control program. The Discharger evaluated existing facilities and developed additional plans to reduce and control wet weather overflows based on a design overflow event approach, which is an industry standard approach for sewer evaluation and design. The new effort was called the SSO Elimination Program (SSOEP). In 2000, the Discharger set forth a program of cost-effective treatment and collection system improvements, based on the current wet weather design criteria. This program is described in the Discharger's October 2000 Engineering Feasibility Study for Sanitary Sewer Overflow Elimination Program (October 2000 Study).
8. The October 2000 Study describes a variety of SSO elimination alternatives to meet the Discharger's goals. The process for considering these alternatives included review by the Discharger, a Technical Advisory Committee (TAC), and a Citizens Advisory Committee (CAC). Development of this program included consideration of the previous wet weather criteria, the Regional Water Board's wet weather overflow control strategy, cost-effective evaluations, and consultations with Regional Water Board staff. The proposed criteria and program would provide conveyance and treatment of flows for at least a 5-year design event. A 5-year design event has an overflow occurrence once every 5 years, or a 20 percent chance of occurrence in any one year, based on continuous simulation modeling using the past 40 years of rainfall data.
9. The US EPA Region IX determined in its June 18, 1986, letter that East Bay Municipal Utility District's wet weather overflow structures (EBMUD's Overflow Structures) are not POTWs, and are therefore not subject to secondary treatment requirements pursuant to 40 CFR 122.2. The Basin Plan recommends (Chapter 4, Wet Weather Overflows, Conceptual Approach) combination of maintenance and associated treatment and overflow requirements to control wet weather overflows. The Executive Officer relied upon US EPA's June 18, 1986 letter and approved the October 2000 Study and concurred with its conclusions that the 5-year conveyance and treatment alternative and the collection system upgrades and maintenance program meets the Basin Plan's requirements for wet weather overflows. However, in a letter to the Regional Water Board regarding EBMUD's Overflow Structures, (September 7, 2004), US EPA reversed its June 18, 1986 letter and stated that any releases from collection systems must meet secondary treatment requirements. The Discharger has spent approximately \$60 million to construct facilities based on the approach approved by the Regional Water Board. The facilities include increased capacity for wet weather flow treatment as well as storage basins and sewer rehabilitation to control wet weather

overflows.

10. The Discharger's program for managing wet weather flows and controlling overflows includes implementation of \$60 million in construction of new facilities and reduction of inflow/infiltration for the purpose of minimizing raw sewage overflows. Capital improvements included in the SSOEP were scheduled to be implemented in three phases. During the previous permit term, the Discharger completed all of the Phase I projects, including the Phase I pilot rehabilitation program of the collection system (10/00-04/02), construction of a 3-million gallon storage at Sears Point Pump Station (1/01-6/03), conveyance improvement project at several bottleneck locations (1/01-10/03), and construction of plant clarifiers/improvements (1/01-2/03). Phase II projects, which comprise additional conveyance improvements, have also been completed. Phase III projects are currently under construction, and these projects include an 8.6 million gallon storage basin at the treatment facility to contain the 5-year design event as well as other remaining conveyance improvements.

B. Discharge Points and Receiving Waters

1. **Discharge Point E-001, Carquinez Strait.** Treated municipal wastewater is discharged to the Carquinez Strait year-round through a submerged outfall in the vicinity of the north end of the Carquinez Bridge, at Latitude 38 degrees, 3 minute, 53 seconds, and Longitude 122 degrees, 13 minutes, 42 seconds. The discharge is through a submerged diffuser 400 feet from the north shore of Carquinez Strait and about 75 feet below the water surface. The discharge receives an effluent to receiving water initial dilution of about 200:1. The Facility discharged an average of 12.3 mgd of treated wastewater to Discharge Point E-001 during the years 2003 through 2005, with an average maximum daily discharge of 17.85 mgd.
2. **Discharge Point E-002, Mare Island Strait.** Secondary treated, disinfected, and dechlorinated wastewater is discharged to Mare Island Strait when wet weather peak flows are greater than 30 mgd, or when the hydraulic capacity of the Discharge Point E-001 outfall has been exceeded, or as approved by the Executive Officer. The discharge is through a submerged diffuser about 100 feet from the east shore of Mare Island Strait, located at Latitude 38 degrees, 5 minute, 23 seconds, and Longitude 122 degrees, 15 minutes, 12 seconds, and receives an effluent to receiving water initial dilution of greater than 10:1. During the years 2003 through 2005, 20 discharge events occurred from Discharge Point E-002, and the following table presents the months in which the discharges occurred, and the volume of effluent discharged.

<u>Date</u>	<u>Total Monthly Volume</u> (million gallons)	<u>Total Annual Volume</u> (million gallons)
5/31/2003	4.53	--
7/31/2003	38.26	--
12/31/2003	2.32	45.11 (2003)
1/31/2004	8.43	--
2/29/2004	15.88	--
10/31/2004	12.16	--
11/30/2004	19.86	--
12/31/2004	35.99	92.32 (2004)

<u>Date</u>	<u>Total Monthly Volume (million gallons)</u>	<u>Total Annual Volume (million gallons)</u>
5/31/2003	4.53	--
7/31/2003	38.26	--
1/31/2005	2.57	--
12/31/2005	51.19	53.76 (2005)

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

1. **Discharge Point E-001.** Effluent limitations contained in the previous permit for discharges from E-001 and representative monitoring data from the term of the previous permit are as follows:

Parameter (units)	Effluent Limitation			Monitoring Data (From 2003 – 2005)		
	Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Biochemical Oxygen Demand (BOD ₅) (mg/L)	30	45	60	26.5	31.3	45
BOD ₅ Monthly Removal (%)	85	--	--	95	85 (Lowest monthly)	--
Total Suspended Solids (TSS) (mg/L)	30	45	60	22.4	26.1	47
TSS Monthly Removal (%)	85	--	--	96	87 (Lowest monthly)	--
O&G (mg/L)	10	--	20	<5	--	<5
Settleable Matter (ml/l/hr)	0.1	--	0.2	0.08		0.85
Total Chlorine Residual (mg/L)	--	--	0.0 (Instantaneous)	--	--	0.0 (Instantaneous)
pH (standard units)	6.0 (min)	--	9.0	--	6.7 (lowest daily)	7.6
Fecal coliform (MPN/100 ml)	200	400 (monthly 90 th percent)	--	29	220	--
Acute Toxicity (% survival)	11-sample median not to fall below 90% and 11-sample 90 th percentile not to fall below 70% survival.			95 (11-sample median, minimum) 78 (single sample minimum) --		
Copper (µg/L) (kg/month)	-- 15	-- --	36 --	9.98 10.2	-- --	9.98 --
Mercury (µg/L) (kg/month)	0.2 0.357	-- --	1.0 --	0.026 0.0274	-- --	0.026 --
Nickel (µg/L) (kg/month)	-- 6.5	-- --	53 --	-- 6.14	-- --	6.2 --
Selenium (µg/L) (kg/month)	-- 2.0	-- --	50 --	-- 1.56	-- --	1.8 --
Cyanide (µg/L)	--	--	10	--	--	3.8

2. Discharge Point E-002. Effluent limitations contained in the previous permit for discharges from E-002 and representative monitoring data from the term of the previous permit are as follows:

Parameter (units)	Effluent Limitation			Monitoring Data (From 2003 – 2005)		
	Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Biochemical Oxygen Demand (BOD ₅) (mg/L)	30	45	60	26	32	32
BOD ₅ Monthly Removal (%)	85	--	--	95	87 (Lowest monthly)	--
Total Suspended Solids (TSS) (mg/L)	30	45	60	23	30	30
TSS Monthly Removal (%)	85	--	--	96	87 (Lowest monthly)	--
O&G (mg/L)	10	--	20	<5	--	<5
Settleable Matter (ml/l/hr)	0.1	--	0.2 (Instantaneous)	0.02		0.1 (Instantaneous)
Total Chlorine Residual (mg/L)	--	--	0.0 (Instantaneous)	--	--	0.0 (Instantaneous)
pH (standard units)	6.5 (min)	8.5 (max)	--	--	6.8 (lowest daily)	7.75
Fecal coliform (MPN/100 ml)	200	400 (monthly 90 th percent)	--	200	500	--
Acute Toxicity (% survival)	11-sample median not to fall below 90% and 11-sample 90 th percentile not to fall below 70% survival.			100 (11-sample median, minimum) 90 (single sample minimum)		
Copper (µg/L) (kg/month)	-- 15	-- --	36 --	-- 1.6	-- --	8.8 --
Mercury (µg/L) (kg/month)	0.2 0.357	-- --	1.0 --	0.026 0.006	-- --	0.026 --
Nickel (µg/L) (kg/month)	-- 6.5	-- --	53 --	-- 0.36	-- --	3.7 --
Selenium (µg/L) (kg/month)	-- 2.0	-- --	50 --	-- 1.5	-- --	1.5 --
Cyanide (µg/L)	--	--	10	--	--	Non-detect

D. Compliance Summary. The following tables summarize the number of effluent limitation exceedances at each discharge point during the previous permit period.

1. Discharge Point E-001

Parameter	Number of Exceedances for the Year				
	2001	2002	2003	2004	2005
Settleable Matter Instantaneous Maximum			1		
Chlorine Residual Instantaneous Maximum	5	3			

2. Discharge Point E-002

Parameter	Number of Exceedances for the Year				
	2001	2002	2003	2004	2005
Fecal Coliform Monthly No more than 10%	2	1		1	
Chlorine Residual Instantaneous Maximum	2				

E. Planned Changes. The Discharger is currently completing, by the end of 2006, the final phases of its Sanitary Sewer Overflow Elimination Program (October 2000), which has included upgrades and repairs in the vicinity of the Sears Point Pump Station, an additional 3.0 million gallon storage tank at the Sears Point Pump Station, and construction of an additional 8.5 million gallons of storage at the Facility. In the future, the Discharger plans to continue I&I reduction activities and collection system improvements at a level ranging from one to two million dollars in expenditures per year, and replacement of older sanitary pump stations and other renovations deemed necessary.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order is issued pursuant to section 402 of the Federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (US EPA) and Chapter 5.5, Division 7 of the California Water Code (CWC). It shall serve as a NPDES permit for point source discharges from the Facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to Article 4, Chapter 4 of the CWC for discharges that are not subject to regulation under CWA section 402.

B. California Environmental Quality Act (CEQA)

This action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21100, et seq.) in accordance with Section 13389 of the CWC.

C. State and Federal Regulations, Policies, and Plans

- 1. Water Quality Control Plans.** The Regional Water Board adopted a Water Quality Control Plan for the San Francisco Bay Basin (Region 2) (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. The Regional Water Board amended the Basin Plan (Resolution No. R2-2004-0003) on January 21, 2004. The State Water Board and the Office of Administrative Law approved these amendments on July 22, 2004, and October 4, 2004, respectively. The US EPA gave final approval to the amendment on January, 5, 2005.

The Basin Plan at page 2-5 states that the beneficial uses of any specifically identified water body generally apply to its tributary streams. The Basin Plan identifies beneficial uses for Carquinez Strait. However, the Basin Plan does not specifically identify beneficial uses for Mare Island Strait, but does identify present and potential uses for San Pablo Bay, to which Mare Island Strait is a tributary. In addition, State Water Resources Control Board (State

Water Board) Resolution No. 88-63 requires that, with certain exceptions, the Regional Water Board assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in the Basin Plan. Thus, beneficial uses applicable to Carquinez Strait and San Pablo Bay are as follows:

Discharge Point	Receiving Water Name	Beneficial Use(s)
E-001 and E-002	Carquinez Strait	Ocean, commercial, and sport fishing (COMM), Estuarine habitat (EST), Industrial service supply (IND), Fish migration (MIGR), Navigation (NAV), Preservation of rare, threatened or endangered species (RARE), Water contact recreation (REC1), Noncontact water recreation (REC2), Fish spawning (SPWN), and Wildlife habitat (WILD).

2. **Thermal Plan.** The State Water Board adopted a *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California* (Thermal Plan) on May 18, 1972, and amended this plan on September 18, 1975. This plan contains temperature objectives for inland surface waters.
3. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** US EPA adopted the NTR on December 22, 1992, which was amended on May 4, 1995, and November 9, 1999, and the CTR on May 18, 2000, which was amended on February 13, 2001. These rules include water quality criteria for priority pollutants and are applicable to this discharge.
4. **State Implementation Policy.** On March 2, 2000, State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the US EPA through the NTR and to the priority pollutant objectives established by the Regional Water Boards in their basin plans, with the exception of the provision on alternate test procedures for individual discharges that have been approved by US EPA Regional Administrator. The alternate test procedures provision was effective on May 22, 2000. The SIP became effective on May 18, 2000. The State Water Board subsequently amended the SIP, and the amendments became effective on July 31, 2005. The SIP includes procedures for determining the need for and calculating water quality-based effluent limitations (WQBELs), and requires Dischargers to submit data sufficient to do so.
5. **Antidegradation Policy.** Section 131.12 of 40 CFR requires that State water quality standards include an antidegradation policy consistent with the Federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16, which incorporates the requirements of the Federal antidegradation policy. Resolution 68-16 requires that existing water quality is maintained unless degradation is justified based on specific findings. As discussed in detail in this Fact Sheet, the permitted discharge is consistent with the antidegradation provision of 40 CFR §131.12 and State Water Board Resolution 68-16.
6. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and 40 CFR §122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed. Some effluent limitations

in this Order are less stringent than those in the previous permit. As discussed in this Fact Sheet, this relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and Federal regulations.

7. **Monitoring and Reporting Requirements.** Section 122.48 of 40 CFR requires that all NPDES permits specify requirements for recording and reporting monitoring results. Sections 13267 and 13383 of the CWC authorize the Regional Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program (MRP) establishes monitoring and reporting requirements to implement Federal and State requirements. This MRP is provided in Attachment E.

On August 6, 2001, Regional Water Board staff sent a letter to all permitted dischargers pursuant to Section 13267 of CWC requiring the submittal of effluent and receiving water data on priority pollutants (Attachment I).

D. Impaired Water Bodies on CWA 303(d) List. On June 6, 2003, the US EPA approved a revised list of impaired water bodies prepared by the State (hereinafter referred to as the 303(d) list), prepared pursuant to provisions of Section 303(d) of the Federal CWA requiring identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. San Pablo Bay is listed as an impaired waterbody. The pollutants impairing San Pablo Bay include chlordane, DDT, diazinon, dieldrin, dioxin compounds, exotic species, furan compounds, mercury, nickel, PCBs, dioxin-like PCBs, and selenium. The SIP requires final effluent limitations for all 303(d)-listed pollutants to be consistent with total maximum daily loads and associated waste load allocations.

1. **Total Maximum Daily Loads.** The Regional Water Board plans to adopt Total Maximum Daily Loads (TMDLs) for pollutants on the 303(d)-list in San Pablo Bay in the next ten years. Future review of the 303(d)-list for San Pablo Bay may result in revision of the schedules or provide schedules for other pollutants.
2. **Waste Load Allocations.** The TMDLs will establish waste load allocations (WLAs) for point sources and load allocations (LAs) for non-point sources, and will result in achieving the water quality standards for the waterbodies. Final WQBELs for 303(d)-listed pollutants in this discharge will be based on WLAs contained in the respective TMDLs.
3. **Implementation Strategy.** The Regional Water Board's strategy to collect water quality data and to develop TMDLs is summarized below:
 - a. **Data Collection.** The Regional Water Board has given the dischargers the option to collectively assist in developing and implementing analytical techniques capable of detecting 303(d)-listed pollutants to at least their respective levels of concern or WQOs/WQC. This collective effort may include development of sample concentration techniques for approval by the US EPA. The Regional Water Board will require dischargers to characterize the pollutant loads from their facilities into the water-quality limited waterbodies. The results will be used in the development of TMDLs, and may be used to update or revise the 303(d)-list or change the WQOs/WQC for the impaired waterbodies including San Pablo Bay.

- b. **Funding Mechanism.** The Regional Water Board has received, and anticipates continuing to receive, resources from Federal and State agencies for TMDL development. To ensure timely development of TMDLs, the Regional Water Board intends to supplement these resources by allocating development costs among dischargers through the RMP or other appropriate funding mechanisms.

E. Other Plans, Policies and Regulations – N/A

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source discharges to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations; and other requirements in NPDES permits. There are two principal bases for effluent limitations: 40 CFR §122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 CFR §122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. Where numeric water quality objectives have not been established, three options exist to protect water quality: 1) 40 CFR §122.44(d) specifies that WQBELs may be established using US EPA criteria guidance under CWA section 304(a); 2) proposed State criteria or a State policy interpreting narrative criteria supplemented with other relevant information may be used; or 3) an indicator parameter may be established.

A. Discharge Prohibitions

1. **Prohibition III.A (No discharge other than that described in this Order).** This prohibition is the same as in the previous permit, and is based on CWC Section 13260 that requires filing of a report of waste discharge (ROWD) before discharges can occur. The Discharger submitted a ROWD for the discharges described in this order; therefore, discharges not described in this Order are prohibited.
2. **Prohibition III.B (10:1 Dilution).** This prohibition is the same as in the previous permit, and is based on the Basin Plan that prohibits discharges with constituents of concern not receiving a minimum 10:1 initial dilution (Chapter 4, Discharge Prohibition No. 1). This Order grants a 10:1 dilution credit for the discharge (see later sections). Furthermore, some effluent limits are calculated based on this credit. As such, these limits would not be protective if the discharge did not achieve 10:1 dilution; therefore, necessitating the prohibition.
3. **Prohibition III.C (No bypasses or overflow of untreated wastewater, except under the conditions at 40 CFR 122.41(m)(4)(i)(A), (B) and (C))** This prohibition is based on 40 CFR 122.41(m)(4). This prohibition grants bypass of peak wet weather flows above 30 MGD that are recombined with secondary treatment flows and discharged at E-001, which met the conditions at 40 CFR 122.41(m)(4)(i)(A)-(C) as detailed below.

Rationale for approval of peak wet weather diversions:

Background

During significant storm events, these high volumes can overwhelm certain parts of the wastewater treatment process and may cause damage or failure of the system. Operators of wastewater treatment plants must manage these high flows to both ensure the continued operation of the treatment process and to prevent backups and overflows of raw wastewater in basements or on city streets. US EPA recognized that peak wet weather flow diversions around secondary treatment units at POTW treatment plants serving separate sanitary sewer conveyance systems may be necessary in some circumstances.

In December 2005, US EPA invited public comment on its proposed Peak Wet Weather Policy that provides interpretation that 40 CFR 122.41(m) applies to wet weather diversions that are recombined with flow from the secondary treatment, and guidance by which its NPDES permit may be approved by the Water Board (available on the website <http://cfpub.epa.gov/npdes/wetweather.cfm>). This policy requires that discharges must still meet all the requirements of NPDES permits, and encourages municipalities to make investments in ongoing maintenance and capital improvements to improve their system's long-term performance.

Criteria of 40 CFR 122.41(m)(4)(i)(A)-(C)

US EPA's Peak Wet Weather policy states that "If the criteria of 40 CFR 122.41(m)(4)(i)(A)-(C) are met, the Regional Water Board can approve peak wet weather diversions that are recombined with flow from the secondary treatment units." Based upon the following information, the Regional Water Board determined that the Discharger's anticipated bypass (planned blending) met the criteria in 40 CFR 122.41(m)(4)(i)(A)-(C), and therefore conditionally approved the discharge of blended wastewater as specified in the second paragraph of this prohibition.

(A) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage. Under section (B), the discharger evaluated all feasible alternatives to bypasses and determined that with peak wet weather flows above 30 MGD, bypasses are unavoidable to prevent backups and overflow of raw sewage in basements or on city streets, which could result in severe property damage or personal injury.

(B) There were no feasible alternatives to the bypass. In 1988, the Discharger initiated a program to manage its wet weather flows in a cost-effective manner to protect public health and water quality, and accelerated this program in 1999. In 2000, the Discharger submitted a comprehensive analysis of its existing facilities to the Regional Water Board (Engineering Feasibility Study, October 2000, Carollo Engineers), and subsequently developed and implemented a program to reduce wet weather flows as approved by the Executive Officer on November 13, 2000. The Discharger implemented capital improvement projects at the cost of \$60 million for construction of new storage basins, increased capacity for wet weather treatment, and reduction of inflow/infiltration throughout the collection system in three-phases, which should be completed in October 2006. Additionally, the Discharger has committed an annual budget of \$1-\$2 million towards ongoing maintenance of its collection system.

Based on the Discharger's analysis and programs previously discussed, and past diversion data (February 2001 - April 2006), the Regional Water Board determined that the Discharger

has no feasible alternative to diverting peak wet weather flows above 30 MGD around its secondary unit(s).

(C) The permittee submitted notices at least ten days before the date of the bypass.

This criterion is satisfied by the Regional Water Board's public hearing regarding, and adoption of, this Order.

4. **Prohibition III.D (Average dry weather flow not to exceed 15.5 mgd).** This prohibition is based on the historic reliable treatment capacity of the Facility. Exceedance of the Facility's average dry weather flow design capacity may result in lowering the reliability of achieving compliance with water quality requirements, unless the Discharger demonstrates otherwise through an antidegradation study. This prohibition is based on 40 CFR 122.41(l).
5. **Prohibition III.E (No sanitary sewer overflows (SSO) to waters of the United States):** The Clean Water Act prohibits the discharge of wastewater to surface waters except as authorized under an NPDES permit. POTWs must achieve secondary treatment, at a minimum, and any more stringent limitations that are necessary to achieve water quality standards. (33U.S.C. §1311(b)(1)(B) and (C).) Thus, an SSO that results in the discharge of raw sewage, or sewage not meeting secondary treatment, to surface waters is prohibited under the Clean Water Act.

B. Technology-Based Effluent Limitations

1. **Scope and Authority.** Permit effluent limits for conventional pollutants are technology-based. Technology-based effluent limits are put in place to ensure that full secondary treatment is achieved by the wastewater treatment facility, as required under 40 CFR Part 133.102. Technology-based effluent limits for the conventional pollutants are defined by the Basin Plan, as discussed further below.
2. **Applicable Technology-Based Effluent Limitations**

**Summary of Technology-based Effluent Limitations
Discharge Points E-001 and E-002**

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
CBOD ₅	mg/L	25	40	--	--	--
TSS	mg/L	30	45	--	--	--
O&G	mg/L	10	--	20	--	--
Total Chlorine Residual	mg/L	--	--	--	--	0.0
pH	Standard Units	--	--	--	6.0	9.0

- a. **CBOD₅, TSS, O&G, and Settleable Matter.** The effluent limits for CBOD₅, TSS, and O&G are technology-based limits representative of, and intended to ensure, adequate and reliable secondary level wastewater treatment. These technology based limits are at least as stringent as the Basin Plan requirements (Chapter 4, Table 4-2). The technology based

limits are unchanged from the previous permit, except daily maximum limits and settleable matter limits are no longer required based on the 2005 Basin Plan amendment. Federal regulations allow the parameter BOD₅ to be substituted with CBOD₅. The previous permit contained monitoring of either BOD₅ or CBOD₅. This Order specifies monitoring with CBOD₅ only, based on site specific alternate CBOD₅ limits as allowed by Table 4-2 of the Basin Plan requirements. General compliance has been demonstrated by existing Facility performance.

- b. **Total Chlorine Residual.** The effluent limitation for total chlorine residual is from the Basin Plan (Chapter 4, Table 4-2). The Discharger may elect to use a continuous on-line monitoring system(s) for measuring flow, chlorine, and sodium bisulfite dosage (including a safety factor) and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Regional Water Board staff may conclude that these false positives of chlorine residual exceedances are not violations of the effluent limit in this Order (section IV.A.1.a.).
- c. **pH.** The effluent limitations for pH are a standard secondary treatment requirement, and are unchanged from the previous Order. These limitations are based on the Basin Plan requirements (Chapter 4, Table 4-2), which is derived from Federal requirements (40 CFR 133.102). The Facility's ability to comply with these limitations has been demonstrated by existing plant performance. The Discharger may elect to use continuous on-line monitoring system(s) for measuring pH; in this case, 40 CFR 401.17, and BPJ are the basis for the compliance provisions for pH limitations.
- d. **85% Removal.** The effluent limitations for CBOD₅ and TSS 85% monthly removal are technology-based. They are unchanged from the previous Order and are based on Basin Plan requirements, derived from Federal requirements (40 CFR 133.102; definition in 133.101). Compliance has been demonstrated by existing Facility performance.
- e. **Fecal Coliform Bacteria.** The effluent limitations for fecal coliform are unchanged from the previous permit and are based on site specific alternate fecal coliform limits as allowed by Table 4-2 of the Basin Plan requirements. The purpose of these effluent limits is to ensure adequate disinfection of the discharge in order to protect beneficial uses of the receiving waters. Effluent limits based on WQOs for bacteriological parameters for receiving water beneficial uses are given in terms of parameters which serve as surrogates for pathogenic organisms. The traditional parameter in this regard is coliform bacteria, either as total coliform or as fecal coliform. The Regional Water Board can allow the Discharger to use alternate limitations of bacteriological quality if the Discharger can establish to the satisfaction of the Regional Water Board that the use of the fecal coliform or enterococci limitations will not result in unacceptable adverse impacts on the beneficial uses of the receiving water.

In a report dated January 2002, *Vallejo Sanitation and Flood Control District Beneficial Uses and Fecal Coliform Study*, the Discharger demonstrated that while in compliance with these fecal coliform limits, the discharge is not expected to cause an exceedance of the Basin Plan's WQOs, and therefore, the use of fecal coliform limitations is protective of beneficial uses. Based upon this report, this Order specifies these alternate fecal coliform bacteria limits.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

- a. As specified in 40 CFR §122.44(d)(1)(i), permits are required to include WQBELs for pollutants (including toxicity) that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an excursion above any state water quality standard (Reasonable Potential). The process for determining Reasonable Potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other State plans and policies, or water quality criteria contained in the CTR and NTR.
- b. NPDES regulations, the SIP, and US EPA's March 1991 Technical Support Document for Water Quality-Based Toxics Control (the TSD) provide the basis to establish Maximum Daily Effluent Limitations (MDELs), and Average Monthly Effluent Limitations (AMELs).
 - 1) **NPDES Regulations.** NPDES regulations at 40 CFR Part 122.45(d) state:
"For continuous discharges all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall *unless impracticable* be stated as ... average weekly and average monthly discharge limitations for POTWs."
 - 2) **SIP.** The SIP (page 8, section 1.4) requires WQBELs be expressed as MDELs and AMELs. For aquatic life-based calculations (only), the amended SIP indicates MDELs are to be used in place of average weekly limitations for POTWs.
 - 3) **TSD.** The TSD (p. 96) states a maximum daily limitation is appropriate for two reasons:
 - a) The basis for the 7-day average for POTWs derives from the secondary treatment requirements. This basis is not related to the need for assuring achievement of water quality standards.
 - b) The 7-day average, which could comprise up to seven or more daily samples, could average out peak toxic concentrations, and therefore, the discharge's potential for causing acute toxic effects would be missed. A maximum daily limitation would be toxicologically protective of potential acute toxicity impacts.
- c. Based on the above three factors, MDELs are used in this permit to protect against acute water quality effects, because it is impracticable to use weekly average limitations to guard against acute effects. Although weekly averages are effective for monitoring the performance of biological wastewater treatment plants, the MDELs are necessary for preventing fish kills or mortality to aquatic organisms.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

The WQC and WQOs applicable to the receiving waters for this discharge are from the Basin Plan, the US EPA's May 18, 2000 Water Quality Standards, Establishment of Numeric

Criteria for Priority Toxic Pollutants for the State of California (the California Toxics Rule, or the CTR), and the US EPA's National Toxics Rule (the NTR).

- a. **Basin Plan.** The Basin Plan specifies numeric WQOs for 10 priority toxic pollutants, as well as narrative WQOs for toxicity and bioaccumulation in order to protect beneficial uses. The pollutants for which the Basin Plan specifies numeric objectives are arsenic, cadmium, chromium (VI), copper in freshwater, lead, mercury, nickel, silver, zinc, and cyanide (see also c., below). The narrative toxicity objective states in part "[a]ll waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms." The bioaccumulation objective states in part "[c]ontrollable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered." Effluent limitations and provisions contained in this Order are designed to implement these objectives, based on available information.
- b. **CTR.** The CTR specifies numeric aquatic life criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants. These criteria apply to inland surface waters and enclosed bays and estuaries such as here, except that where the Basin Plan's Tables 3-3 and 3-4 specify numeric objectives for certain of these priority toxic pollutants, the Basin Plan's numeric objectives apply over the CTR (except in the South Bay south of the Dumbarton Bridge).
- c. **NTR.** The NTR established numeric aquatic life criteria for selenium, numeric aquatic life and human health criteria for cyanide, and numeric human health criteria for 34 toxic organic pollutants for waters of San Francisco Bay upstream to, and including, Suisun Bay and the Delta. This includes the receiving waters at Discharge Points E-001 and E-002.
- d. **TSD.** Where numeric objectives have not been established or updated in the Basin Plan, 40 CFR Part 122.44(d) specifies that WQBELs may be set based on US EPA criteria, supplemented where necessary by other relevant information, to attain and maintain narrative WQOs to fully protect designated beneficial uses. Regional Water Board staff used best professional judgment (BPJ) to determine the WQOs, WQCs, WQBELs, and calculations contained in this Order as defined by the TSD.
- e. **Receiving Water Salinity and Hardness.** The Basin Plan states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable WQC. It further states that freshwater criteria shall apply to discharges to waters with salinities equal to or less than one ppt at least 95 percent of the time. Saltwater criteria shall apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to water with salinities in between these two categories, or tidally influenced freshwaters that support estuarine beneficial uses, the criteria shall be the lower of the salt or freshwater criteria (the latter calculated based on ambient hardness) for each substance.

- 1) **Receiving Water Salinity.** The receiving waters for the subject discharges are the waters of Carquinez Strait and Mare Island Strait, which are tributary to San Pablo

Bay. San Pablo Bay is a tidally influenced waterbody, with significant fresh water inflows during the wet weather season. San Pablo Bay is specifically defined as estuarine under the Basin Plan salinity definition. Therefore, the effluent limitations specified in this Order for discharges to San Pablo Bay are based on the lower of the marine and freshwater Basin Plan WQOs and CTR and NTR WQC.

- 2) **Hardness.** Some WQOs and WQC are hardness dependent. The Discharger sampled the receiving water near both Discharge Points E-001 and E-002 from March 2003 through November 2005. The minimum hardness observed during this period was 470 mg/L; however, in determining the WQOs and WQC for this Order, the Regional Water Board used a hardness of 400 mg/L, which is the maximum hardness value recommended by the CTR.
- f. **Copper/Nickel Translators.** The CTR and the Basin Plan establish aquatic life- and human health-based water quality criteria. The water quality criteria are typical values based on default site conditions and assumptions. However, site-specific conditions such as water temperature, pH, hardness, concentrations of metal binding sites, particulates organic carbon, dissolved organic carbon, and concentrations of other chemicals can greatly impact the chemical toxicity. The purpose of a translator is to adjust these default assumptions for varying site-specific conditions to prevent exceedingly stringent or under protective water quality objectives.

The Basin Plan WQOs and CTR WQC for metals are expressed in the dissolved form of the metal (except for cadmium). The CTR conversion factors are used to convert the dissolved Basin Plan and CTR WQOs/WQC to total recoverable values. When site-specific translators are available, they will be use instead of CTR conversion factors.

The San Francisco Estuary Institute (SFEI), in collaboration with the Regional Water Board and the regulated discharger community collects water samples approximately three times per year at various monitoring stations throughout the San Francisco Bay region (the Regional Monitoring Program or RMP). SFEI has collected data for total and dissolved trace metals since 1993.

For the Regional Water Board's copper/nickel site-specific translator study (SSO study), ambient copper and nickel data were collected during four sampling events in 2000 – 2001 at thirteen stations. These data were used to augment all relevant RMP data for computing copper and nickel translators. The combined RMP and special study data were pooled into representative data sets to derive translators. The data were pooled using four categories: 1) Central Bay, 2) North Bay, 3) All Data, and 4) All Data but BD15 (mouth of Petaluma River). For San Pablo Bay (North Bay, Region 2), the site-specific translators for copper are 0.38 and 0.67, and for nickel are 0.27 and 0.57 for converting chronic and acute dissolved WQOs into total WQOs, respectively.

The site-specific translators indicate that the USEPA default conversion factors are overly-protective of aquatic life. Application of these translators to water quality criteria will not eliminate reasonable potential.

3. **Determining the Need for WQBELs.** Assessing whether a pollutant has Reasonable Potential is the fundamental step in determining whether or not a WQBEL is required.

- a. **Reasonable Potential Analysis (RPA).** For priority pollutants, Regional Water Board staff analyzed the Discharger's self-monitoring effluent data and ambient background data, and considered the nature of the Facility's operations to determine if the discharges from Discharge Points E-001 or E-002 demonstrate Reasonable Potential. Using the method prescribed in Section 1.3 of the SIP, Regional Water Board staff compared the effluent data with numeric and narrative WQOs in the Basin Plan and numeric WQC from US EPA, the NTR, and the CTR ("Reasonable Potential Analysis" or "RPA"). The Basin Plan objectives and CTR criteria are shown in Attachment 1 of this Fact Sheet.

The RPA identifies the observed maximum effluent concentration (MEC) in the effluent for each pollutant, based on effluent concentration data. There are three triggers in determining Reasonable Potential:

- 1) The first trigger is activated if the MEC is greater than the lowest applicable WQO ($MEC \geq WQO$), which has been adjusted, if appropriate, for pH, hardness, and translator data. If the MEC is greater than the adjusted WQO, then that pollutant has reasonable potential, and a WQBEL is required.
 - 2) The second trigger is activated if the observed maximum ambient background concentration (B) is greater than the adjusted WQO ($B > WQO$) and the pollutant was detected in any of the effluent samples.
 - 3) The third trigger is activated if a review of other information determines that a WQBEL is required to protect beneficial uses, even though both MEC and B are less than the WQO/WQC. A limitation may be required under certain circumstances to protect beneficial uses.
- b. **Effluent Data.** The Regional Water Board's August 6, 2001 letter titled *Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy* (hereinafter referred to as the August 6, 2001 Letter) to all permittees, formally required the Discharger (pursuant to Section 13267 of the CWC) to initiate or continue to monitor for the priority pollutants using analytical methods that provide the best detection limits reasonably feasible. Regional Water Board staff analyzed this effluent data to determine if the discharge has Reasonable Potential. The RPA was based on the effluent monitoring data collected by the Discharger from 2003 through 2005.
- c. **Ambient Background Data.** Ambient background values are used in the RPA and in the calculation of effluent limitations. For the RPA, ambient background concentrations are the observed maximum detected water column concentrations. The SIP states that for calculating WQBELs, ambient background concentrations are either the observed maximum ambient water column concentrations or, for criteria/objectives intended to protect human health from carcinogenic effects, the arithmetic mean of observed ambient water concentrations. The RMP station at Yerba Buena Island, located in the Central Bay,

has been sampled for most of the inorganic (CTR constituent numbers 1–15) and some of the organic (CTR constituent numbers 16–126) toxic pollutants. Not all the constituents listed in the CTR were analyzed by the RMP during this time. These data gaps are addressed by the Regional Water Board's August 6, 2001 Letter, which also requires the dischargers to conduct ambient background monitoring and effluent monitoring for those constituents not currently sampled by the RMP and to provide this technical information to the Regional Water Board.

On May 15, 2003, a group of several San Francisco Bay Region Dischargers (known as the Bay Area Clean Water Agencies, or BACWA) submitted a collaborative receiving water study, entitled the *San Francisco Bay Ambient Water Monitoring Interim Report*. This study includes monitoring results from sampling events in 2002 and 2003 for the remaining priority pollutants not monitored by the RMP. The RPA was conducted and the WQBELs were calculated using RMP data from 1993 through 2003 for inorganics and organics at the Yerba Buena Island RMP station, and additional data from the BACWA *Ambient Water Monitoring: Final CTR Sampling Update Report* for the Yerba Buena Island RMP station.

- d. **RPA Determination.** The MECs, WQOs/WQC, bases for the WQOs/WQC, background concentrations used, and Reasonable Potential conclusions from the RPA are listed in the following table for all constituents analyzed from both discharge locations (E-001 and E-002). Some of the constituents in the CTR were not determined because of the lack of an objective/criteria or effluent data. Based on the RPA methodology in the SIP, some constituents did not demonstrate Reasonable Potential. The RPA results are shown below and in Attachment 2 of this Fact Sheet. The pollutants that exhibit Reasonable Potential at Discharge Points E-001 and E-002 are copper, and mercury, and at Discharge Point E-001 only, cyanide, tributyltin, and dioxin TEQ.

CTR #	PRIORITY POLLUTANTS (µg/L)	Governing WQO/WQC	Maximum Background or Minimum DL ^{1,2}	MEC (E-001) or Minimum DL ¹	RPA Results ³ (E-001)	MEC (E-002) or Minimum DL ¹	RPA Results ³ (E-002)
1	Antimony	43001	1.8	0.7	No	Not Available	Cannot determine
2	Arsenic	36	2.46	3	No	2.2	No
3	Beryllium	No Criteria	0.215	No Criteria	Undetermined	No Criteria	Undetermined
4	Cadmium	3.37	0.1268	0.31	No	0.2	No
5a	Chromium (III or Total)	644.20	Not Available	Not Available	Cannot determine	Not Available	Cannot determine
5b	Chromium (VI)	11.43	4.4	2.15	No	1.8	No
6	Copper	17	2.45	9.98	Yes	8.8	Yes
7	Lead	8.52	0.8	1.52	No	1.27	No
8	Mercury	0.025	0.0086	0.026	Yes	0.026	Yes
9	Nickel	8.28	3.7	6.2	No	3.74	No
10	Selenium	5.0	0.39	1.8	No	1.5	No
11	Silver	2.24	0.0516	1.29	No	0.5	No
12	Thallium	6.3	0.21	0.2	No	Not Required ⁴	Cannot determine
13	Zinc	85.62	4.4	37.7	No	27	No
14	Cyanide	1	0.4	3.8	Yes	3	No
16	2,3,7,8-TCDD	1.4E-08	1.0E-09	1.0E-09	Cannot determine	Not Required ⁴	Cannot determine
	Dioxin TEQ	1.4E-08	7.1E-08	4.93E-07	Yes	Not Required ⁴	Cannot determine
17	Acrolein	780	0.5	0.56	No	Not Required ⁴	Cannot determine
18	Acrylonitrile	0.66	0.03	0.33	No	Not Required ⁴	Cannot determine
19	Benzene	71	0.05	0.07	No	Not Required ⁴	Cannot determine
20	Bromoform	360	0.5	0.1	No	Not Required ⁴	Cannot determine
21	Carbon Tetrachloride	4.4	0.06	0.06	No	Not Required ⁴	Cannot determine
22	Chlorobenzene	21,000	0.5	0.06	No	Not Required ⁴	Cannot determine
23	Chlorodibromomethane	34	0.05	0.2	No	Not Required ⁴	Cannot determine
24	Chloroethane	No Criteria	0.5	0.07	Undetermined	Not Required ⁴	Cannot determine
25	2-Chloroethylvinyl Ether	No Criteria	0.5	0.1	Undetermined	Not Required ⁴	Cannot determine
26	Chloroform	No Criteria	0.5	1.4	Undetermined	Not Required ⁴	Cannot determine

CTR #	PRIORITY POLLUTANTS (µg/L)	Governing WQO/WQC	Maximum Background or Minimum DL ^{1,2}	MEC (E-001) or Minimum DL ¹	RPA Results ³ (E-001)	MEC (E-002) or Minimum DL ¹	RPA Results ³ (E-002)
27	Dichlorobromomethane	46	0.05	0.5	No	Not Required ⁴	Cannot determine
28	1,1-Dichloroethane	No Criteria	0.05	0.05	Undetermined	Not Required ⁴	Cannot determine
29	1,2-Dichloroethane	99	0.04	0.06	No	Not Required ⁴	Cannot determine
30	1,1-Dichloroethylene	3.2	0.5	0.06	No	Not Required ⁴	Cannot determine
31	1,2-Dichloropropane	39	0.05	0.05	No	Not Required ⁴	Cannot determine
32	1,3-Dichloropropylene	1,700	Not Available	0.06	No	Not Required ⁴	Cannot determine
33	Ethylbenzene	29,000	0.5	0.1	No	Not Required ⁴	Cannot determine
34	Methyl Bromide	4,000	0.5	0.05	No	Not Required ⁴	Cannot determine
35	Methyl Chloride	No Criteria	0.5	0.04	Undetermined	Not Required ⁴	Cannot determine
36	Methylene Chloride	1,600	0.5	0.07	No	Not Required ⁴	Cannot determine
37	1,1,2,2-Tetrachloroethane	11	0.05	0.06	No	Not Required ⁴	Cannot determine
38	Tetrachloroethylene	8.85	0.05	0.2	No	Not Required ⁴	Cannot determine
39	Toluene	200,000	0.3	0.7	No	Not Required ⁴	Cannot determine
40	1,2-Trans-Dichloroethylene	140,000	0.5	0.1	No	Not Required ⁴	Cannot determine
41	1,1,1-Trichloroethane	No Criteria	0.5	0.06	Undetermined	Not Required ⁴	Cannot determine
42	1,1,2-Trichloroethane	42	0.05	0.07	No	Not Required ⁴	Cannot determine
43	Trichloroethylene	81	0.5	0.1	No	Not Required ⁴	Cannot determine
44	Vinyl Chloride	525	0.5	0.05	No	Not Required ⁴	Cannot determine
45	2-Chlorophenol	400	1.2	0.6	No	Not Required ⁴	Cannot determine
46	2,4-Dichlorophenol	790	1.3	0.7	No	Not Required ⁴	Cannot determine
47	2,4-Dimethylphenol	2,300	1.3	0.9	No	Not Required ⁴	Cannot determine
48	2-Methyl-4,6-Dinitrophenol	765	1.2	0.9	No	Not Required ⁴	Cannot determine
49	2,4-Dinitrophenol	14,000	0.7	0.6	No	Not Required ⁴	Cannot determine
50	2-Nitrophenol	No Criteria	1.3	0.7	Undetermined	Not Required ⁴	Cannot determine
51	4-Nitrophenol	No Criteria	1.6	0.6	Undetermined	Not Required ⁴	Cannot determine
52	3-Methyl-4-Chlorophenol	No Criteria	1.1	0.5	Undetermined	Not Required ⁴	Cannot determine
53	Pentachlorophenol	7.90	1	0.9	No	Not Required ⁴	Cannot determine
54	Phenol	4,600,000	1.3	50	No	Not Required ⁴	Cannot determine
55	2,4,6-Trichlorophenol	6.50	1.3	0.6	No	Not Required ⁴	Cannot determine
56	Acenaphthene	2,700	0.0015	0.03	No	Not Required ⁴	Cannot determine
57	Acenaphthylene	No Criteria	0.00053	0.02	Undetermined	0.2	Undetermined
58	Anthracene	110,000	0.0005	0.03	No	0.3	No
59	Benzidine	0.00054	0.0015	1	No	Not Required ⁴	Cannot determine
60	Benzo(a)Anthracene	0.049	0.0053	0.02	No	0.3	No
61	Benzo(a)Pyrene	0.049	0.00029	0.02	No	0.3	No
62	Benzo(b)Fluoranthene	0.049	0.0046	0.03	No	0.3	No
63	Benzo(ghi)Perylene	No Criteria	0.0027	0.03	Undetermined	0.1	Undetermined
64	Benzo(k)Fluoranthene	0.049	0.0015	0.04	No	0.3	No
65	Bis(2-Chloroethoxy)Methane	No Criteria	0.3	0.8	Undetermined	Not Required ⁴	Cannot determine
66	Bis(2-Chloroethyl)Ether	1.40	0.3	0.7	No	Not Required ⁴	Cannot determine
67	Bis(2-Chloroisopropyl)Ether	170,000	Not Available	0.6	No	Not Required ⁴	Cannot determine
68	Bis(2-Ethylhexyl)Phthalate	5.90	0.5	5.6	No	Not Required ⁴	Cannot determine
69	4-Bromophenyl Phenyl Ether	No Criteria	0.23	0.4	Undetermined	Not Required ⁴	Cannot determine
70	Butylbenzyl Phthalate	5,200	0.52	0.8	No	Not Required ⁴	Cannot determine
71	2-Chloronaphthalene	4,300	0.3	0.5	No	Not Required ⁴	Cannot determine
72	4-Chlorophenyl Phenyl Ether	No Criteria	0.3	0.5	Undetermined	Not Required ⁴	Cannot determine
73	Chrysene	0.049	0.0024	0.04	No	0.3	No
74	Dibenzo(a,h)Anthracene	0.049	0.00064	0.03	No	0.1	No
75	1,2 Dichlorobenzene	17,000	0.8	0.1	No	Not Required ⁴	Cannot determine
76	1,3 Dichlorobenzene	2,600	0.8	0.1	No	Not Required ⁴	Cannot determine
77	1,4 Dichlorobenzene	2,600	0.8	1	No	Not Required ⁴	Cannot determine
78	3,3-Dichlorobenzidine	0.077	0.001	0.3	No	Not Required ⁴	Cannot determine
79	Diethyl Phthalate	120,000	0.24	15	No	Not Required ⁴	Cannot determine
80	Dimethyl Phthalate	2,900,000	0.24	0.6	No	Not Required ⁴	Cannot determine
81	Di-n-Butyl Phthalate	12,000	0.5	0.6	No	Not Required ⁴	Cannot determine
82	2,4-Dinitrotoluene	9.10	0.27	0.6	No	Not Required ⁴	Cannot determine
83	2,6-Dinitrotoluene	No Criteria	0.29	0.5	Undetermined	Not Required ⁴	Cannot determine
84	Di-n-Octyl Phthalate	No Criteria	0.38	0.7	Undetermined	Not Required ⁴	Cannot determine
85	1,2-Diphenylhydrazine	0.54	0.0037	0.6	No	Not Required ⁴	Cannot determine
86	Fluoranthene	370	0.011	0.03	No	Not Required ⁴	Cannot determine
87	Fluorene	14,000	0.00208	0.02	No	Not Required ⁴	Cannot determine
88	Hexachlorobenzene	0.00077	0.0000202	0.4	No	Not Required ⁴	Cannot determine
89	Hexachlorobutadiene	50	0.3	0.7	No	Not Required ⁴	Cannot determine
90	Hexachlorocyclopentadiene	17,000	0.31	0.4	No	Not Required ⁴	Cannot determine
91	Hexachloroethane	8.90	0.2	0.6	No	Not Required ⁴	Cannot determine
92	Indeno(1,2,3-cd) Pyrene	0.049	0.004	0.03	No	0.05	No
93	Isophorone	600	0.3	0.5	No	Not Required ⁴	Cannot determine
94	Naphthalene	No Criteria	0.0023	0.02	Undetermined	Not Required ⁴	Cannot determine
95	Nitrobenzene	1,900	0.25	0.7	No	Not Required ⁴	Cannot determine

CTR #	PRIORITY POLLUTANTS (µg/L)	Governing WQO/WQC	Maximum Background or Minimum DL ^{1,2}	MEC (E-001) or Minimum DL ¹	RPA Results ³ (E-001)	MEC (E-002) or Minimum DL ¹	RPA Results ³ (E-002)
96	N-Nitrosodimethylamine	8.10	0.3	0.6	No	Not Required ⁴	Cannot determine
97	N-Nitrosodi-n-Propylamine	1.40	0.001	0.8	No	Not Required ⁴	Cannot determine
98	N-Nitrosodiphenylamine	16	0.001	0.6	No	Not Required ⁴	Cannot determine
99	Phenanthrene	No Criteria	0.0061	0.03	Undetermined	0.05	Undetermined
100	Pyrene	11,000	0.0051	0.03	No	0.05	No
101	1,2,4-Trichlorobenzene	No Criteria	0.3	0.6	Undetermined	Not Required ⁴	Cannot determine
102	Aldrin	0.00014	Not Available	0.003	No	Not Required ⁴	Cannot determine
103	alpha-BHC	0.013	0.000496	0.003	No	Not Required ⁴	Cannot determine
104	beta-BHC	0.046	0.000413	0.003	No	Not Required ⁴	Cannot determine
105	gamma-BHC	0.063	0.0007034	0.003	No	Not Required ⁴	Cannot determine
106	delta-BHC	No Criteria	0.000042	0.002	Undetermined	Not Required ⁴	Cannot determine
107	Chlordane	0.00059	0.00018	0.005	No	Not Required ⁴	Cannot determine
108	4,4'-DDT	0.00059	0.000066	0.002	No	Not Required ⁴	Cannot determine
109	4,4'-DDE	0.00059	0.000693	0.002	No	Not Required ⁴	Cannot determine
110	4,4'-DDD	0.00084	0.000313	0.003	No	Not Required ⁴	Cannot determine
111	Dieldrin	0.00014	0.000264	0.002	No	Not Required ⁴	Cannot determine
112	alpha-Endosulfan	0.0087	0.000031	0.002	No	Not Required ⁴	Cannot determine
113	beta-Endosulfan	0.0087	0.000069	0.002	No	Not Required ⁴	Cannot determine
114	Endosulfan Sulfate	240	0.0000819	0.002	No	Not Required ⁴	Cannot determine
115	Endrin	0.0023	0.000036	0.002	No	Not Required ⁴	Cannot determine
116	Endrin Aldehyde	0.81	Not Available	0.002	No	Not Required ⁴	Cannot determine
117	Heptachlor	0.00021	0.000019	0.003	No	Not Required ⁴	Cannot determine
118	Heptachlor Epoxide	0.00011	0.000094	0.002	No	Not Required ⁴	Cannot determine
119-125	PCBs sum	0.00017	Not Available	0.03	No	Not Required ⁴	Cannot determine
126	Toxaphene	0.00020	Not Available	0.15	No	Not Required ⁴	Cannot determine
	Tributyltin	0.00740	0.001	0.011	Yes	Not Required ⁴	Cannot determine
	Total PAHs	15.00	0.052	3	No	6	No

- [1] Concentration in bold is the actual detected maximum concentration, otherwise the concentration shown is the maximum detection level.
- [2] Maximum Background = Not Available, if there is no monitoring data for this constituent.
- [3] RPA Results = Yes, if MEC > WQO/WQC,
= No, if MEC or all effluent concentration non-detect < WQO/WQC,
= Undetermined, if no objective promulgated, and
= Cannot determine, due to lack of data.
- [4] November 13, 2001, the Executive Officer approved the Discharger's monitoring plan.

e. RPA Considerations for Specific Pollutants

1) Copper.

a) **Copper WQO.** The marine chronic and acute criteria for dissolved copper adopted in the CTR and Basin Plan are defined as 3.1 and 4.8 µg/L *multiplied by a Water Effects Ratio (WER)* (40 CFR 131.38 (b) and (c)(4)(i) and (iii)). The default value for the WER is 1.0 unless a WER has been developed as set forth in US EPA's WER guidance (Interim Guidance on Determination and Use of Water Effect Ratios, US EPA Office of Water, EPA-823-B-94-001, February 1994). WERs have been developed for San Francisco Bay in accordance with this US EPA WER guidance, as documented in *North of Dumbarton Bridge Copper and Nickel Site-Specific Objective (SSO) Derivation (Clean Estuary Partnership December 2004)*. Based on the data for San Pablo Bay in this report, a WER value of 2.4 is appropriate for this discharge. In addition, Regional Water Board developed copper site-specific translators along with the study using RMP data for the San Pablo Bay as previously discussed in section IV.C.2.f. of this Fact Sheet. The translators are 0.38 and 0.67 for converting chronic and acute dissolved WQOs into total WQOs, respectively. The applicable WQC calculated are 20 µg/L for chronic protection and 17 µg/L for acute protection.

- b) **RPA Results.** This Order establishes effluent limitations for copper by Trigger 3 to hold the Discharger to current performance and to ensure no significant increase in the discharge, and thus, to conform to Federal and State Antidegradation Policy requirements.
- 2) **Mercury.** This Order establishes effluent limitations for mercury because the 0.026 µg/L MEC exceeds the governing WQO of 0.025 µg/L, demonstrating Reasonable Potential by Trigger 1. Moreover, using Trigger 3, this Order establishes effluent limitations for mercury because San Pablo Bay is listed as impaired by mercury. This governing WQO is based on the Basin Plan salt water protection of aquatic life.
- 3) **Cyanide.** This Order establishes effluent limitations for cyanide because the 3.8 µg/L MEC exceeds the governing WQC of 1.0 µg/L, demonstrating Reasonable Potential by Trigger 1. This governing WQC is based on NTR salt water/ fresh water chronic criteria for the protection of aquatic life.
- 4) **Dioxin Equivalent (TEQ).**
- a) **Dioxin TEQ WQC.** The CTR establishes a numeric human health WQC of 0.014 picogram per liter (pg/L) for 2,3,7,8-tetrachlorinated dibenzo-p-dioxin (2,3,7,8-TCDD) based on consumption of aquatic organisms. The preamble of the CTR states that California NPDES permits should use toxicity equivalents (TEQs) where dioxin-like compounds have Reasonable Potential with respect to narrative criteria. The preamble further states that US EPA intends to use the 1998 World Health Organization Toxicity Equivalence Factor (TEF) scheme in the future and encourages California to use this scheme in State programs. In addition, the CTR preamble states US EPA's intent to adopt revised WQC guidance subsequent to their health reassessment for dioxin-like compounds. The Regional Water Board staff used TEQs to translate the narrative bioaccumulation WQO for various dioxin congeners.
- b) **Basin Plan.** The Basin Plan contains a narrative WQO for bioaccumulative substances:

“Many pollutants can accumulate on particulates, in sediments, or bioaccumulate in fish and other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered.”

This narrative WQO applies to dioxin and furan compounds, based in part on the consensus of the scientific community that these compounds associate with particulates, accumulate in sediments, and bioaccumulate in the fatty tissue of fish and other organisms.

- c) **303-d List.** US EPA's 303(d) listing determined that the narrative objective for bioaccumulative pollutants was not met because of the levels of dioxins and furans in the fish tissue.
- d) **RPA Results.** The dioxin TEQ MEC of 0.493 pg/L exceeds the 2,3,7,8-TCDD 0.014 pg/L, demonstrating Reasonable Potential to cause or contribute to exceedances of the narrative objective.
- e) **Dioxin Effluent Limits.** Due to the limited monitoring data, no dioxin limits (final or interim) are established. The final limits for dioxin TEQ will be based on the WLA assigned to the Discharger in the TMDL. This Order requires additional dioxin monitoring to complement the Clean Estuary Partnership's special dioxin project, consisting of impairment, assessment, and a conceptual model for dioxin loading into the Bay. The permit will be reopened, as appropriate, to include interim dioxin limitations when additional data become available.

5) Tributyltin (TBT)

- a) **TBT WQOs.** The Basin Plan contains a narrative WQO that states no toxics shall be discharged in toxic amounts. This narrative WQO applies to TBT, based in part on US EPA's final ambient acute and chronic water quality document, *Aquatic Life Criteria: Tributyltin (TBT)*, January 5, 2004 (TBT Report). US EPA's TBT Report states that "TBT is a highly toxic biocide that is a problem in the aquatic environment because it is extremely toxic to non-target organisms, is linked to imposex and immuno-suppression in snails and bivalves, and can be persistent." US EPA recommended criteria for saltwater aquatic life of 0.0074 µg/L for chronic protection (4-day average) and 0.42 µg/L for acute protection (1-hour average).
- b) **RPA Results.** The TBT MEC of 0.011 µg/L exceeds the criterion of 0.0074 µg/L, demonstrating Reasonable Potential, by Trigger 1, to cause or contribute to exceedances of the narrative objective.
- c) **TBT Effluent Limits.** Due to the limited monitoring data, no tributyltin limits (final or interim) are established. This Order requires the Discharger to continue monitoring TBT. The permit will be reopened, as appropriate, to include TBT limitations when additional data become available. Final WQBELs for TBT may be considered by the Regional Water Board in the next permit reissuance if the effluent continues to show reasonable potential.
- f) **Pollutants that no Longer Trigger Reasonable Potential: Cadmium, Lead, Nickel, Selenium, and Zinc.** The previous permit contained effluent limits for these pollutants. As indicated above, these constituents do not have a reasonable potential to cause an exceedance of their respective WQC. Accordingly, this Order does not propose to include effluent limitations for these constituents.

- 4. **WQBEL Calculations.** The final WQBELs were developed for the toxic and priority pollutants that were determined to have reasonable potential to cause or contribute to exceedances of the WQOs or WQC. The WQOs or WQC used for each pollutant with

Reasonable Potential, for which a WQBEL was derived, are summarized in the following table:

Pollutant	Chronic WQO/WQC ($\mu\text{g/L}$)	Acute WQO/WQC ($\mu\text{g/L}$)	Human Health WQC ($\mu\text{g/L}$)	Basis of WQO/WQC ¹
Copper	20	17	--	CTR
Mercury	0.025	2.1	0.051	BP
Cyanide	1	1	220,000	NTR

[1] BP = Basin Plan, CTR = California Toxics Rule, NTR = National Toxics Rule,

a. Dilution and Assimilative Capacity

1) **Dilution:** Wastewater is discharged year-round to Discharge Point E-001 through a submerged diffuser 400 feet from the north shore of Carquinez Strait and about 75 feet below the water surface. The Discharger indicates that Discharge Point E-001 receives a minimum initial dilution of 200:1. The second outfall is used intermittently during wet weather, when flows to the Facility exceed 30 mgd or the hydraulic capacity of the Discharge Point E-001 outfall is exceeded. During these conditions, some secondary treated wastewater is automatically sent to Discharge Point E-002, while a blend of primary and secondary treated wastewater is routed to Discharge Point E-001. The wastewater diverted to Discharge Point E-002 is discharged through a submerged diffuser about 100 feet from the east shore of Mare Island Strait and about 2 feet below the water surface. The Discharger indicates that Discharge Point E-002 receives a minimum initial dilution greater than 10:1. This Order continues the 10:1 dilution credit in the previous permit for both Discharge Points E-001 and E-002. The basis for the dilution credit is explained below.

a) **Discharge Point E-001.** The Regional Water Board believes a conservative 10:1 dilution credit for discharges of non-bioaccumulative pollutants to San Francisco Bay is necessary for protection of beneficial uses. The basis for limiting the dilution credit is based on SIP provisions in Section 1.4.2. The following outlines the basis for limiting the dilution credit:

- (1) A far-field background station is appropriate because the San Francisco Bay watershed, including the receiving waters, is a very complex estuarine system with highly variable and seasonal upstream freshwater inflows and diurnal tidal saltwater inputs.
- (2) Due to the complex hydrology of the San Francisco Bay watershed, a mixing zone cannot be accurately established.
- (3) Previous dilution studies do not fully account for the cumulative effects of other wastewater discharges to the system.
- (4) The SIP allows limiting a mixing zone and dilution credit for persistent pollutants (e.g., copper and mercury).

The main justification for limiting dilution credit is uncertainty in accurately determining ambient background and uncertainty in accurately determining the mixing zone in a complex estuarine system with multiple wastewater discharges. The basis for using 10:1 is that it was granted in the previous permit. This 10:1

limit is also based on the Basin Plan's prohibition number 1, which prohibits discharges with less than 10:1. The following gives more detailed rationale:

- (1) **Complex Estuarine System Necessitates Far-Field Background.** The SIP allows background to be determined on a discharge-by-discharge or water body-by-water body basis (SIP section 1.4.3). Consistent with the SIP, Regional Water Board staff has chosen to use a water body-by-water body basis because of the uncertainties inherent in accurately characterizing ambient background in a complex estuarine system on a discharge-by-discharge basis.

With this in mind, the Yerba Buena Island Station fits the guidance for ambient background in the SIP compared to other stations in the RMP. The SIP states that background data are applicable if they are "representative of the ambient receiving water column that will mix with the discharge." Regional Water Board staff believe that data from this station are representative of water that will mix with the discharge from Discharge Point E-001. Although this station is located near the Golden Gate, it would represent the typical water flushing in and out in the Bay Area each tidal cycle. For most of the Bay Area, the waters represented by this station make up a large part of the receiving water that will mix with the discharge.

- (2) **Uncertainties Prevent Accurate Mixing Zones in Complex Estuarine Systems.** There are uncertainties in accurately determining the mixing zones for each discharge. The models that have been used by dischargers to predict dilution have not considered the three-dimensional nature of the currents in the estuary resulting from the interaction of tidal flushes and seasonal fresh water outflows. Saltwater is heavier than fresh water. Colder saltwater from the ocean flushes in twice a day generally under the warmer fresh river waters that flow out annually. When these waters mix and interact, complex circulation patterns occur due to the different densities of these waters. These complex patterns occur throughout the estuary but are most prevalent in the San Pablo Bay, Carquinez Strait, and Suisun Bay areas. The locations change depending on the strength of each tide and the variable rate of delta outflow. Additionally, sediment loads to the Bay from the Central Valley also change on a longer-term basis. These changes can result in changes to the depths of different parts of the Bay making some areas more shallow and/or other areas more deep. These changes affect flow patterns that in turn can affect the initial dilution achieved by a discharger's diffuser.
- (3) **Dye studies do not account for cumulative effects from other discharges.** The tracer and dye studies conducted are often not long enough in duration to fully assess the long residence time of a portion of the discharge that is not flushed out of the system. In other words, some of the discharge, albeit a small portion, makes up part of the dilution water. So unless the dye studies are of long enough duration, the diluting effect on the dye measures only the initial dilution with "clean" dilution water rather than the actual dilution with "clean" dilution water plus some amount of original discharge that resides in the system. Furthermore, both models and dye studies that have been conducted

have not considered the effects of discharges from other nearby discharge sources, nor the cumulative effect of discharges from over 20 other major dischargers to San Francisco Bay system. While it can be argued the effects from other discharges are accounted for by factoring in the local background concentration in calculating the limitations, accurate characterization of local background levels are also subject to uncertainties resulting from the interaction of tidal flushing and seasonal fresh water outflows described above.

- (4) **Mixing Zone Is Further Limited for Persistent Pollutants.** Discharges to the Bay Area waters are not completely-mixed discharges as defined by the SIP. Thus, the dilution credit should be determined using site-specific information for incompletely-mixed discharges. The SIP in section 1.4.2.2 specifies that the Regional Board “significantly limit a mixing zone and dilution credit as necessary... For example, in determining the extent of a mixing zone or dilution credit, the RWQCB shall consider the presence of pollutants in the discharge that are ... persistent.” The SIP defines persistent pollutants to be “substances for which degradation or decomposition in the environment is nonexistent or very slow.” The pollutants at issue here are persistent pollutants (e.g., copper, lead, nickel, silver, and zinc). The dilution studies that estimate actual dilution do not address the effects of these persistent pollutants in the Bay environment, such as their long-term effects on sediment concentrations.

- b) **Discharge Point E-002.** Section 1.4.2 of the SIP allows the Regional Water Board to grant dilution credit when the Discharger has demonstrated through studies to the Regional Water Board that the credit is appropriate. The Regional Water Board believes that carrying over the 10:1 dilution credit from the previous permit for the intermittent discharges to Mare Island Strait (Discharge Point E-002) is appropriate, because the Discharger has documented (described below) that this discharge receives at least 10:1 dilution.

In 1997, the Discharger conducted an evaluation of the outfall at Discharge Point E-002 in order to define the initial dilution ratio. The final report, *Mare Island Outfall Dilution Study*, March 1997, concluded that, with specified modifications to the outfall, an initial dilution of greater than 10:1 would be achieved when the outfall's diffuser was submerged. In July 1997, the Discharger installed 12 inch variable width 'Tideflex' port valves to induce turbulent mixing, and oriented the discharge ports at a downward angle of 11.5 degrees from horizontal. In 2000, the Discharger installed a laser-beam monitor on top of the outfall to continuously monitor its depth below the receiving water surface during all conditions (i.e. Napa River inflow and tidal influences). Regional Water Board staff evaluated the Discharger's monitoring data from the periods January 2003 through December 2005, and found that the outfall was always submerged (depth variances: minimum = 0.12 feet, average = 1.17 feet, and maximum = 2.0 feet). As such, the minimum dilution for Discharge Point E-002 should be at least 10:1.

- 2) **Assimilative Capacity.** In response to the State Water Board's Order No. 2001-06, Regional Water Board staff has evaluated the assimilative capacity of the receiving water for 303(d) listed pollutants for which the Discharger has reasonable potential in

its discharges. The evaluation included a review of RMP data (local and Central Bay stations), effluent data, and WQOs/WQC. From this evaluation, the assimilative capacity appears to be highly variable due to the complex hydrology of the receiving water. Therefore, there is uncertainty associated with the representative nature of the appropriate ambient background data to conclusively quantify the assimilative capacity of the receiving water. Pursuant to Section 1.4.2.1 of the SIP, "dilution credit may be limited or denied on a pollutant-by-pollutant basis..."

For certain bioaccumulative pollutants, based on BPJ, dilution credit is not included in calculating the final WQBELs. This determination is based on available data on concentrations of these pollutants in aquatic organisms, sediment, and the water column. Selenium, mercury, PCBs, and dioxins and furans are on the CWA Section 303(d) list. Dilution credit is not included for these pollutants. The following factors suggest that there is no more assimilative capacity in the Bay for these pollutants.

- a) San Francisco Bay fish tissue data shows that these pollutants, except for selenium, exceed screening levels. The fish tissue data are contained in "Contaminant Concentrations in Fish from San Francisco Bay 1997," May 1997. Denial of dilution credits for these pollutants is further justified by fish advisories to the San Francisco Bay. The Office of Environmental Health and Hazard Assessment (OEHHA) performed a preliminary review of the data from the 1994 San Francisco Bay pilot study, "Contaminated Levels in Fish Tissue from San Francisco Bay." The results of the study showed elevated levels of chemical contaminants in the fish tissues. Based on these results, OEHHA issued an interim consumption advisory covering certain fish species from the bay in December 1994. This interim consumption advice is still in effect due to health concerns based on exposure to sport fish from the bay contaminated with mercury, PCBs, dioxins, and pesticides.
- b. **Effluent Limit Calculations.** The following effluent limit calculations were developed for the toxic and priority pollutants that were determined to have reasonable potential to cause or contribute to exceedances of the WQOs or WQC. These effluent limitations were calculated based on appropriate WQOs/WQC, background concentrations at Yerba Buena Island RMP Station, a maximum dilution ratio of 10:1 for non-bioaccumulative pollutants, and the appropriate procedures specified in Section 1.4 of the SIP as shown in the following table. For copper, the site-specific translator of 0.67 was included to convert the dissolved criteria to total criteria. Additionally, a WER value of 2.4 was determined to be applicable for this discharge. Both are presented in the *North of Dumbarton Bridge Copper and Nickel Site-Specific Objective (SSO) Derivation (Clean Estuary Partnership December 2004)* report.

PRIORITY POLLUTANTS	Copper	Mercury	Cyanide	Alternate Cyanide (SSO)	Alternate Copper (SSO)
Units	ug/L	ug/L	ug/L	ug/L	ug/L
Basis and Criteria type	CTR SW	BP SW	NTR SW	NTR SW	CTR SW
Lowest WQO	17	0.025	1	2.9	6.0
Dilution Factor (D) (if applicable)	9	0	9	9	9
No. of samples per month	4	4	4	4	4
Aquatic life criteria analysis required? (Y/N)	Y	Y	Y	Y	Y
HH criteria analysis required? (Y/N)	N	Y	Y	Y	N
Applicable Acute WQO	17	2.1	1	9.4	9.4
Applicable Chronic WQO	20	0.025	1	2.9	6.0
HH criteria		0.051	220000	220000	
Background (max conc for Aq Life calc)	2.45	0.0086	0.4	0.4	2.45
Background (avg conc for HH calc)			0.21	0.21	
Is the pollutant Bioaccumulative(Y/N)? (e.g., Hg)	N	Y	N	N	N
ECA acute	150.0	2.1	6.4	90.4	67.95
ECA chronic	174.0	0.025	6.4	25.4	135.95
ECA HH		0.051	2199998.12	2199998.12	
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	N	N	Y	Y	Y
Avg of effluent data points	6.471	0.0174			6.4710
Std Dev of effluent data points	1.354	0.0039			1.3540
CV calculated	0.21	0.22			
CV (Selected) - Final	0.21	0.22	0.60	0.60	0.21
ECA acute mult99	0.63	0.61	0.32	0.32	0.63
ECA chronic mult99	0.79	0.78	0.53	0.53	0.79
LTA acute	94.65	1.29	2.05	29.03	42.83
LTA chronic	137.21	0.019	3.38	13.40	107.15
minimum of LTAs	94.65	0.019	2.05	13.40	42.83
AMEL mult95	1.18	1.19	1.55	1.55	1.18
MDEL mult99	1.58	1.63	3.11	3.11	1.59
AMEL (aq life)	111.77	0.023	3.19	20.80	50.60
MDEL(aq life)	149.95	0.032	6.40	41.72	67.95
MDEL/AMEL Multiplier	1.34	1.37	2.01	2.01	1.34
AMEL (human hlth)		0.051	2199998	2199998	
MDEL (human hlth)		0.070	4413612	4413612	
minimum of AMEL for Aq. life vs HH	111.77	0.023	3.19	20.80	50.60
minimum of MDEL for Aq. Life vs HH	149.95	0.032	6.40	41.72	67.95
Final limit - AMEL	110	0.023	3.2	19	49
Final limit - MDEL	148	0.032	6.4	40	66
Max Effl Conc (MEC)	9.98	0.026	3.8	3.8	9.98
Feasibility to comply?	Yes	No	No	Yes	Yes

c. Alternate Effluent Limitation.

- 1) **Cyanide.** As described in *Draft Staff Report on Proposed Site-Specific Water Quality Objectives and Effluent Limit Policy for Cyanide for San Francisco Bay*, dated November 10, 2005, the Regional Water Board is proposing to develop site-specific criteria for cyanide. In this report, the proposed site-specific criteria for marine waters are 2.9 µg/L as a four-day average, and 9.4 µg/L as a one-hour average. Based on these assumptions, and the Discharger's current cyanide data (coefficient of variation of 0.6), final water quality based effluent limits for cyanide will be 40 µg/L as a Maximum Daily, and 19 µg/L as an Monthly Average. These alternate limits will become effective only if the site-specific objective adopted for cyanide contains the same assumptions in the staff report, dated November 10, 2005.
- 2) **Copper.** As described in *North of Dumbarton Bridge Copper and Nickel Site-Specific Objective (SSO) Derivation (Clean Estuary Partnership December 2004)*, the Regional Water Board is proposing to develop site-specific criteria for copper. In this report, the proposed site-specific criteria for marine waters are 6.0 µg/L as a four-day average, and 9.4 µg/L as a one-hour average, and a WER value of 2.4. Based on these assumptions, and the Discharger's current copper data (coefficient of variation of 0.21), final water quality based effluent limits for copper will be 66 µg/L as a Maximum Daily, and 49 µg/L as a Monthly Average. These alternate limits will become effective only if the site-specific objective adopted for copper contains the same assumptions in the Clean Estuary Partnership December 2004 report.

d. Summary of Water Quality-based Effluent Limitations

Discharge Points E-001 and E-002

Parameter	Units	Final Effluent Limits		Interim Effluent Limits	
		Daily Maximum (MDEL)	Monthly Average (AMEL)	Daily Maximum	Monthly Average
Copper	µg/L	148	110	--	--
Mercury	µg/L	0.032	0.023	0.087	--
Cyanide	µg/L	6.4	3.2	10.0	--
Alternate Cyanide (SSO)	µg/L	40	19	--	--
Alternate Copper (SSO)	µg/L	66	49	--	--

5. **Whole Effluent Toxicity (WET).** The Basin Plan specifies a narrative objective for toxicity, requiring that all waters shall be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental response on aquatic organisms. Detrimental response includes but is not limited to decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alternations in population, community ecology, or receiving water biota. The whole effluent toxicity limits contained in this Order are necessary to ensure that this objective is protected.

- a. **Whole Effluent Acute Toxicity.** This Order includes effluent limits for whole-effluent acute toxicity that are unchanged from the previous permit, and is based on the Basin Plan (Table 4-2).
- b. **Whole Effluent Chronic Toxicity.** This Order includes requirements for chronic toxicity monitoring based on the Basin Plan narrative toxicity objective, and in accordance with US EPA and State Water Board Task Force guidance, and BPJ. This permit includes the Basin Plan narrative toxicity objective as the applicable effluent limit, implemented via monitoring with numeric values as “triggers” to initiate accelerated monitoring and to initiate a chronic toxicity reduction evaluation (TRE) as necessary. The permit requirements for chronic toxicity are also consistent with the CTR and SIP requirements.

D. Final Effluent Limitations

a. Summary of Final Effluent Limitations – Discharge Points E-001 and E-002

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
CBOD ₅	mg/L	25	40	--	--	--
TSS	mg/L	30	45	--	--	--
O&G	mg/L	10	--	20	--	--
Total Chlorine Residual	mg/L	--	--	--	--	0.0
pH	Standard Units	--	--	--	6.0	9.0
Copper	µg/L	110	--	148	--	--
Mercury Effective Starting April 28, 2010	µg/L	0.023	--	0.032	--	--
Cyanide Effective Starting April 28, 2010	µg/L	3.2	--	6.4	--	--

- b. **Anti-backsliding/Antidegradation.** All conventional pollutant limitations (i.e. CBOD₅, TSS, O&G, Total Chlorine Residual, Fecal Coliform, and pH) are defined by the Basin Plan, and are the same as in the previous permit, and therefore, the anti-backsliding and antidegradation requirements are satisfied. For copper, the previous permit included an interim maximum daily limitation of 36 µg/L, and does not specify final WQBELs. Antibacksliding does not apply to interim limits and since there were no final WQBELs in the previous permit to which to compare the new WQBELs, there is no backsliding. The revised permit is consistent with antidegradation through pretreatment requirements that will hold the Discharger to current performance.

E. Interim Effluent Limitations

1. **Feasibility Evaluation.** The Discharger submitted an infeasibility to comply report for Discharge Points E-001 and E-002, dated April 6, 2006, for mercury, and cyanide (Infeasibility Study). The Infeasibility Study asserts that the Discharger cannot immediately comply with the mercury and cyanide WQBELs. Regional Water Board staff used the

Discharger's self-monitoring data from January 2003 through December 2005 to confirm the Discharger's assertion of infeasibility.

- a. **Mercury.** For mercury, Regional Water Board staff statistically analyzed the data to compare the mean, 95th percentile, and 99th percentile with the long-term average (LTA), average monthly effluent limit (AMEL), and maximum daily effluent limit (MDEL). If the LTA, AMEL, and MDEL all exceed the mean, 95th percentile, and 99th percentile, it is feasible for the Discharger to comply with WQBELs. Based on this analysis and the comparisons in the following table, the Regional Water Board confirms the Discharger's assertion of infeasibility.

	Mean vs. LTA	95 th vs. AMEL	99 th vs. MDEL	Feasible to Comply
Mercury	0.017 < 0.019	0.39 > 0.023	0.54 > 0.032	No

- b. **Cyanide.** For cyanide, the Discharger's self-monitoring data resulted in 4 detected values out of 37 samples of cyanide. The Regional Water Board finds this small number of detected data precludes any meaningful statistical analysis for the purpose of feasibility determination. However, the maximum effluent concentration (MEC) at 3.8 µg/L during this period exceeds the AMEL, as indicated in the following table. The Regional Water Board, therefore, considers the occurrence of the MEC value above the WQBEL to confirm the Discharger's assertion of infeasibility.

Pollutant	MEC µg/L	MDEL µg/L	AMEL µg/L	Feasible to Comply?
Cyanide	3.8	6.4	3.2	No

2. **Determination of Interim Effluent Limitations.** Interim effluent limitations were derived for those constituents (mercury and cyanide) for which the Discharger has shown infeasibility of complying with the respective final limitations and has demonstrated that compliance schedules are justified based on the Discharger's source control and pollution minimization efforts in the past and continued efforts in the present and future. The SIP requires the interim numeric effluent limitations for the pollutants be based on either interim performance-based limitations or previous permit limitations, whichever is more stringent.
- a. **Mercury.** For mercury, the performance-based limitation of 0.87 µg/L, for secondary treatment plants, was calculated statistically using ultra-clean mercury concentration data (*Staff Report: Statistical Analysis of Pooled Data from Region-wide ultra-clean Sampling*, 2000). The previous Order included a daily maximum limitation of 1.0 µg/L. To comply with the SIP, this Order establishes the performance based limitation of 0.87 µg/L as the interim maximum daily limitation.
- b. **Cyanide.** For cyanide, the limited detected values preclude any meaningful statistical evaluation of the Discharger's current treatment performance to determine a performance-based limitation. The previous permit included a daily maximum limitation of 10 µg/L. Therefore, this Order established the previous limitation of 10 µg/L as the interim maximum daily limitation.

3. Compliance Schedules.

- a. Pursuant to Section 2.1.1 of the SIP, "the compliance schedule provisions for the development and adoption of a TMDL only apply when: (a) the Discharger requests and demonstrates that it is infeasible for the Discharger to achieve immediate compliance with a CTR criterion; and (b) the Discharger has made appropriate commitments to support and expedite the development of the TMDL. In determining appropriate commitments, the Regional Water Board should consider the Discharger's contribution to current loadings and the Discharger's ability to participate in TMDL development." As further described in a finding below, the Discharger has requested and demonstrated that it is infeasible to achieve immediate compliance for mercury and cyanide.
- b. The SIP and the Basin Plan authorize compliance schedules in a permit if an existing Discharger cannot immediately comply with a new and more stringent effluent limitation. Compliance schedules for limitations derived from CTR or the NTR WQC are based on Section 2.2 of the SIP, and compliance schedules for limitations derived from Basin Plan WQOs are based on the Basin Plan. Both the SIP and the Basin Plan require the Discharger to demonstrate the infeasibility of achieving immediate compliance with the new limitation to qualify for a compliance schedule.

The SIP and Basin Plan require the following documentation to be submitted to the Regional Water Board to support a finding of infeasibility:

- Descriptions of diligent efforts the Discharger have made to quantify pollutant levels in the discharge, sources of the pollutant in the waste stream, and the results of those efforts.
- Descriptions of source control and/or pollutant minimization efforts currently under way or completed.
- A proposed schedule for additional or future source control measures, pollutant minimization, or waste treatment.
- A demonstration that the proposed schedule is as short as practicable.

The Basin Plan provides for a 10-year compliance schedule to implement measures to comply with new standards as of the effective date of those standards. This provision applies to the objectives adopted in the 2004 Basin Plan Amendment. Additionally, the provision authorizes compliance schedules for new interpretations of other existing standards if the new interpretation results in more stringent limitations.

- c. As previous described, the Discharger submitted the Infeasibility Study, and the Regional Water Board staff confirmed their assertions.
- d. This permit establishes compliance schedules until April 27, 2010, for mercury and cyanide. Since these compliance schedules are within the effective date of the permit, this Order includes final WQBELs.

During the compliance schedules, the Regional Water Board may take appropriate enforcement actions if interim limitations and requirements are not met.

4. **Mercury Interim Mass Emission Limitation/Mass Trigger.** This Order includes an interim mercury mass-based effluent limitation of 0.357 kilograms per month (kg/month) and a mass trigger of 0.058 kg/month. The mass limitation and mass trigger are retained from the previous permit. The Regional Water Board included a mass limit and trigger level for mercury in the permit to maintain ambient water quality. The combination of limit and trigger protect the receiving water and does not cause further degradation of the water's beneficial uses. The mass trigger level in the permit requires the Discharger, when loading exceeds the trigger, to take certain specified actions to determine the cause of the higher load and to bring mercury mass back below the trigger (Provision C.2.c of this Order). The mass-based effluent limitation is intended to maintain the Discharger at current loadings while encouraging recycling and providing a buffer for growth until a TMDL is established for San Pablo Bay. The final mercury effluent limitations will be based on the Discharger's WLA in the TMDL.

The inclusion of interim performance-based mass limits for bioaccumulative pollutants is consistent with the guidance described in section 2.1.1 of the SIP. Because of their bioaccumulative nature, an uncontrolled increase in the total mass loads of these pollutants in the receiving water will have significant adverse impacts on the aquatic ecosystem.

F. Land Discharge Specifications – N/A

- G. **Reclamation Specifications.** In accordance with Provision 13 of the previous Order, the Discharger conducted a Reclamation Study and submitted the final report, Reclaimed Water Study, Final Report, August 2003, to the Executive Officer. The report's findings concluded, "the City has adequate water supply for its ultimate demands under best-case conditions. Therefore, implementation of a recycled water program will likely depend on increased water demand due to development or increased vulnerability of the water supply due to drought." The Regional Water Board determined the Final Report completed, and therefore, this Order does not include additional reclamation studies.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

1. **Receiving Water Limitations V.A.1 through V.A.3 (conditions to be avoided).** These limitations are in the previous permit and are based on the narrative/numerical objectives contained in Chapter 3 of the Basin Plan.
2. **Receiving Water Limitations V.A.4 (compliance with State Law).** This requirement is in the previous permit, requires compliance with Federal and State law, and is self-explanatory.

B. Groundwater – N/A

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

Section 122.48 of 40 CFR requires all NPDES permits to specify recording and reporting of monitoring results. Sections 13267 and 13383 of the California Water Code authorize the Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program, Attachment E of this Order, establishes monitoring and reporting requirements to implement Federal and State requirements. The following provides the rationale for the monitoring and reporting requirements contained in the Monitoring and Reporting Program for this Facility.

The principal purposes of a monitoring program by a discharger are to:

- 1) Document compliance with waste discharge requirements and prohibitions established by the Regional Water Board,
- 2) Facilitate self-policing by the discharger in the prevention and abatement of pollution arising from waste discharge,
- 3) Develop or assist in the development of limitations, discharge prohibitions, national standards of performance, pretreatment and toxicity standards, and other standards, and to
- 4) Prepare water and wastewater quality inventories.

The MRP is a standard requirement in almost all NPDES permits issued by the Regional Water Board, including this Order. It contains definitions of terms, specifies general sampling and analytical protocols, and sets out requirements for reporting of spills, violations, and routine monitoring data in accordance with NPDES regulations, the California Water Code, and Regional Water Board's policies. The MRP also contains a sampling program specific for this Facility. It defines the sampling stations and frequency, the pollutants to be monitored, and additional reporting requirements. Pollutants to be monitored include all parameters for which effluent limitations are specified. Monitoring for additional constituents, for which no effluent limitations are established, is also required to provide data for future completion of RPAs for them.

- A. Influent Monitoring.** This Order requires monitoring of the influent for the same parameters as those in the previous permit. The Discharger shall also sample the influent for its pretreatment program according to the MRP.
- B. Effluent Monitoring.** The Order requires monitoring at Monitoring Location E-001 for conventional and toxic pollutants. The previous permit also included monitoring for some conventional and toxic pollutants at Monitoring Location E-002 for Discharge Point E-002. Regional Water Board evaluated the Discharger's monitoring data from January 2003 through December 2005, and determined that the treated effluent discharged at Discharge Point E-001 is representative of the intermittent secondary treated effluent discharged at Discharge Point E-002, and therefore, the MRP of this Order requires monitoring only at E-001 to determine compliance with effluent limitations of this Order. Compliance with the effluent limitations for Discharge Point E-002, monitored at E-001, is only required when discharges occur at Discharge Point E-002.

This Order continues to require daily monitoring of flow, pH, temperature, dissolved oxygen, and chlorine residual to demonstrate compliance with effluent limitations. This Order also requires monitoring twice weekly for CBOD₅, TSS, and fecal coliform, and monthly monitoring for oil & grease, copper, cyanide, mercury, and acute toxicity. The monitoring frequency for

2,3,7,8-TCDD and other dioxin congeners is increased from twice per year to three times per year, and Tributyltin from twice per year to quarterly, to determine Reasonable Potential since these pollutants have sparse data with either limited or no detected values in the effluent during the period 2003 through 2005. The monitoring frequency for the remaining metals has been changed from monthly to annual, because these constituents were not detected in concentrations above water quality objectives. To determine Reasonable Potential, this Order requires monitoring for the remaining organic priority pollutants including Polynuclear Aromatic Hydrocarbons (PAHs) once during the term of this Order.

- C. Whole Effluent Toxicity Testing Requirements.** This Order requires monthly monitoring of the acute toxicity with rainbow trout, and quarterly monitoring for chronic toxicity with *Haliotis Rufescens*. When either of the two chronic toxicity triggers is exceeded, the Discharger is to accelerate the monitoring. These requirements are unchanged from the previous permit (except for the monitoring frequencies), and is based upon the Basin Plan.

D. Receiving Water Monitoring – N/A

E. Other Monitoring Requirements - Pretreatment Monitoring Requirements

The US EPA formally delegated the Pretreatment Program to the State Water Board and the Regional Water Board on September 22, 1989.

As of September 22, 1989, the Regional Water Board is the Approval Authority and is responsible for the review and approval of new and modified POTW Pretreatment Programs. Monitoring requirements in this permit are consistent with previous requirements.

When sampling periods coincide, one set of test results, reported separately, may be used for those parameters that are required to be monitored in both the Discharger's NPDES permit and the Pretreatment Program.

F. Reporting Requirements (Section X.B.2 in the MRP of this Order)

This monitoring requirement modified section C.2.h of Part A of Self-Monitoring Program (Attachment I) of this Order, and is based on 40 CFR 122.41(m)(3), m(4)(i)(C), and (l)(6), and US EPA's Peak Wet Weather Policy. The monitoring requirements, for bypasses that are consistent with Prohibition III.C of this Order, are to ensure that the discharge of blended wastewater does not have adverse effects on public health or water quality, and to demonstrate compliance with the water quality requirements. The Regional Water Board approved these bypasses, in part, based upon the following discussion of the Discharger's management of peak wet weather diversions at the Facility.

Influent wastewater volumes over 30 MGD flow through two channels, the first channel carries flows up to 30 MGD. Flows above 30 MGD are diverted to the second channel by a gate, which is controlled by a flow signal from the first channel.

The flows above 30 MGD are channeled to a grit chamber and primary sedimentation tank, and then mixed with the fully treated wastewater from the secondary treatment processes for a combined volume of 30 MGD.

The 30 MGD of blended wastewater is disinfected and dechlorinated, and then discharged through a submerged diffuser 400 feet from the north shore of Carquinez Strait and about 75 feet below the water surface (Outfall E-001). This blended wastewater effluent through Outfall E-001 receives an effluent to receiving water initial dilution of about 200:1. Based on the discharge location and dilution, the Regional Water Board believes that the mixing of blended effluent in the receiving water is protective of public health and water quality if it complies with water quality requirements.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions. Standard Provisions, which in accordance with 40 CFR §§122.41 and 122.42, apply to all NPDES discharges and must be included in every NPDES permit, are provided in Attachments D and I of this Order.

B. Special Provisions

1. **Reopener Provisions (Provision C.1).** These provisions are based on 40 CFR 123 and allow future modification of this Order and its effluent limitations as necessary in response to updated WQOs that may be established in the future.

2. Special Studies and Additional Monitoring Requirements (Provision C.2)

- a. **Blending Monitoring Study:** This provision is based on the Basin Plan, and will help to determine compliance with Prohibition 15.
- b. **Effluent Characterization for Selected Constituents:** This provision is based on the Basin Plan and the SIP.
- c. **Ambient Background Receiving Water Study:** This provision is based on the Basin Plan and the SIP.
- d. **Mare Island Strait Receiving Water Study:** This provision is based on the Basin Plan, and will help to determine compliance with water quality objectives.
- e. **Mercury Mass Loading Reduction:** This provision will help to ensure no increases in mercury mass loadings until a TMDL and WLA are established. The Regional Water Board's determination of the need to maintain mass loadings at current levels for this bioaccumulative pollutant are based on Section 2.1.1 of the SIP.
- f. **Optional Mass Offset:** This option is provided to encourage the Discharger to further implement aggressive reduction of mass loads to the San Pablo Bay.

3. Best Management Practices and Pollution Prevention (Provision C.3)

- a. **Pollutant Minimization Program:** This provision is based on Chapter 4 of the Basin Plan and Section 2.4.5 of the SIP. Furthermore, for mercury, and cyanide implementation of pollution minimization is based on Section 2.1 of the SIP because compliance

schedules are granted for these two pollutants. For copper, the pollution prevention measures are to ensure compliance with antidegradation because the copper limits in this Order are numerically less stringent.

4. **Actions for Compliance Schedule Pollutants (Provision C.4).** This provision, based on the SIP, requires that the Discharger participate in the development of a TMDL or SSO for mercury, cyanide, tributyltin, and dioxin-TEQ. In accordance with Section 2.1 of the SIP, and Chapter 4 of the Basin Plan, for the Regional Water Board to authorize compliance schedules in a permit the Discharger must, in part, propose a schedule for additional or future source control measures, pollution minimization actions, or waste treatment. In the case of mercury, cyanide, tributyltin, and dioxin-TEQ, the Discharger indicates that it proposes to achieve compliance with final limits through the SSO or TMDL process. Therefore, annual reporting on the Discharger's efforts to facilitate SSO or TMDL development along with implementation of its Pollution Minimization Plan (required by Provision C.3.a) satisfy the intent of Section 2.1 of the SIP. In the event TMDL(s) or SSO(s) are not developed for mercury or cyanide by July 1, 2009, this provision also requires the Discharger to submit a schedule that documents how it will further reduce pollutant concentrations to ensure compliance with the final limits. Additionally, in the absence of a TMDL for tributyltin or dioxin-TEQ, this provision requires that the Discharger submit by July 1, 2010, a schedule that documents how it will achieve compliance with the final limits by June 30, 2011.
5. **Construction, Operation, and Maintenance Specifications (Provision C.5)**
 - a. **Wastewater Facilities, Review and Evaluation, Status Reports:** This provision is based on the previous permit and the Basin Plan.
 - b. **Operations and Maintenance Manual, Review and Status Reports:** This provision is based on the Basin Plan, the requirements of 40 CFR 122, and the previous permit.
 - c. **Contingency Plan, Review and Status Report:** This provision is based on the Basin Plan, the requirements of 40 CFR 122, and the previous permit.
6. **Special Provisions for Municipal Facilities (POTWs Only) (Provision C.6)**
 - a. **Pretreatment Program:** This provision requires the Discharger to implement its pretreatment program in accordance with Federal pretreatment regulations (40 CFR Part 403). Due to the nature and volume of the industrial influent to the Discharger's Facility, and past violations of toxic pollutant effluent limitations, the Regional Water Board requires the Discharger to develop and maintain its pretreatment program. This provision is retained from the previous permit, and is based on 40 CFR 403.8.
 - b. **Biosolids Management Practices Requirements:** This provision is based on the Basin Plan (Chapter 4) and 40 CFR 257 and 503.
 - c. **Sanitary Sewer Overflows and Sewer System Management Plan:** This provision is to explain the Order's requirements as they relate to the Discharger's collection system, and to promote consistency with the State Water Resources Control Board adopted Statewide

General Waste Discharge Requirements for Sanitary Sewer Overflow (SSO WDRs) and a related Monitoring and Reporting Program (Order No. 2006-0003-DWQ). The bases for these requirements are described elsewhere in this Fact Sheet for those requirements.

- d. **No Feasible Alternatives Analysis.** This provision is based on 40 CFR 122.41(m)(4), and of US EPA's Peak Wet Weather Policy (December 2005).

VIII. PUBLIC PARTICIPATION.

The California Regional Water Quality Control Board, San Francisco Bay Region (Regional Water Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for Vallejo Sanitation and Flood Control District. As a step in the WDR adoption process, the Regional Water Board staff has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

- A. **Notification of Interested Parties.** The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through the following: (a) paper and electronic copies of this Order were relayed to the Discharger, and (b) the Vallejo Times-Herald published a notice on June 8, 2006, that this item would appear before the Board on August 9, 2006.
- B. **Written Comments.** The Regional Water Board staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments should be submitted either in person or by mail to the Executive Office at the Regional Water Board at the address above on the cover page of this Order.

To be fully responded to by staff and considered by the Regional Water Board, written comments should be received at the Regional Water Board offices by 5:00 p.m. on July 7, 2006.

- C. **Public Hearing.** The Regional Water Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: August 9, 2006
Time: 9:00 am
Location: Elihu Harris State Office Building
1515 Clay Street, 1st Floor Auditorium
Oakland, CA 94612
Contact: Gayleen Perreira, (510) 622-2407, gperreira@waterboards.ca.gov

Interested persons are invited to attend. At the public hearing, the Regional Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our web address is <http://www.waterboards.ca.gov/sanfranciscobay/> where you can access the current agenda for changes in dates and locations.

- D. Waste Discharge Requirements Petitions.** Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Regional Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Water Board's action to the following address:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

- E. Information and Copying.** The Report of Waste Discharge (ROWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling (510) 622-2300.
- F. Register of Interested Persons.** Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Gayleen Perreira at (510) 622-2407.

ATTACHMENT 1 – WATER QUALITY OBJECTIVES/CRITERIA

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[illegible]

Notes:

(2) PCBs sum refers to sum of PCB 1016, 1221, 1232, 1242, 1248, 1254, and 1260.

ATTACHMENT 2 – RPA RESULTS FOR PRIORITY POLLUTANTS

Beginning	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7 & 8	Final Result
Constituent name	C (mg/L) Lowest (most protective) Criteria Entry No Criteria For no criteria	Enter the data points from the monitoring data (mg/L)	As at points from the monitoring data (mg/L)	Enter the data points from the monitoring data (mg/L)	MEC-C 1. If MEC-C or MEC-C, effluent limitation is required 2. If MEC-C, go to Step 5	As at points from the monitoring data (mg/L)	Enter the data points from the monitoring data (mg/L)	Final Result
1. Ammonia	4.300	Y	N	0.7	MEC-C, go to Step 5	Y	1.8	MEC-C & B-C
2. Arsenic	36	Y	N	0.31	MEC-C, go to Step 5	Y	2.46	MEC-C & B-C
3. Barium	3.7	Y	N	0.31	MEC-C, go to Step 5	Y	0.215	MEC-C & B-C
4. Cadmium	11.43	Y	N	0.31	MEC-C, go to Step 5	Y	0.215	MEC-C & B-C
5. Chromium (VI)	17.19	Y	N	0.31	MEC-C, go to Step 5	Y	0.215	MEC-C & B-C
6. Copper (303d listed)	8.92	Y	N	0.31	MEC-C, go to Step 5	Y	0.215	MEC-C & B-C
7. Lead	8.92	Y	N	0.31	MEC-C, go to Step 5	Y	0.215	MEC-C & B-C
8. Mercury (303d listed)	0.05	Y	N	0.026	MEC-C, go to Step 5	Y	0.006	MEC-C & B-C
9. Nickel	8.28	Y	N	0.026	MEC-C, go to Step 5	Y	0.006	MEC-C & B-C
10. Selenium (303d listed)	5.90	Y	N	1.9	MEC-C, go to Step 5	Y	0.39	MEC-C & B-C
11. Silver	2.34	Y	N	1.29	MEC-C, go to Step 5	Y	0.0516	MEC-C & B-C
12. Toluene	6.30	Y	N	0.2	MEC-C, go to Step 5	Y	0.21	MEC-C & B-C
13. Zinc	6.30	Y	N	0.2	MEC-C, go to Step 5	Y	0.21	MEC-C & B-C
14. Zinc	6.30	Y	N	0.2	MEC-C, go to Step 5	Y	0.21	MEC-C & B-C
15. Arsenic	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
16. Barium	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
17. Cadmium	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
18. Chromium (VI)	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
19. Copper (303d listed)	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
20. Lead	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
21. Mercury (303d listed)	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
22. Nickel	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
23. Selenium (303d listed)	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
24. Silver	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
25. Toluene	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
26. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
27. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
28. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
29. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
30. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
31. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
32. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
33. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
34. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
35. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
36. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
37. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
38. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
39. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
40. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
41. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
42. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
43. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
44. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
45. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
46. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
47. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
48. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
49. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
50. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
51. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
52. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
53. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
54. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
55. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
56. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
57. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
58. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
59. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
60. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
61. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
62. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
63. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
64. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
65. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
66. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
67. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
68. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
69. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
70. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
71. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
72. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
73. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
74. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
75. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
76. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
77. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
78. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
79. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
80. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
81. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
82. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C
83. Zinc	0.00000014	Y	N	0.00000014	MEC-C, go to Step 5	Y	0.00000014	MEC-C & B-C

Reasonable Potential Analysis Results

^b According to Table 1 of Section (b)(1) of CFR 40.005F 13.26, those criteria should use Basin Plan objectives, criteria for Se and CN are specified by the NTR.

^c Acronyms in the "Final Result" column:

UK: Cannot determine reasonable potential due to the absence of data, or because Minimum D₅₀ is greater than water quality objective or CTR criteria

ME: stream monitoring is required

ATTACHMENT G – CHRONIC TOXICITY – DEFINITIONS OF TERMS AND SCREENING PHASE REQUIREMENTS

CHRONIC TOXICITY

DEFINITION OF TERMS AND SCREENING PHASE REQUIREMENTS

I. Definition of Terms

- A. No observed effect level (NOEL) for compliance determination is equal to IC_{25} or EC_{25} . If the IC_{25} or EC_{25} cannot be statistically determined, the NOEL shall be equal to the NOEC derived using hypothesis testing.
- B. Effective concentration (EC) is a point estimate of the toxicant concentration that would cause an adverse effect on a quantal, “all or nothing,” response (such as death, immobilization, or serious incapacitation) in a given percent of the test organisms. If the effect is death or immobility, the term lethal concentration (LC) may be used. EC values may be calculated using point estimation techniques such as probit, logit, and Spearman-Kärber. EC_{25} is the concentration of toxicant (in percent effluent) that causes a response in 25 percent of the test organisms.
- C. Inhibition concentration (IC) is a point estimate of the toxicant concentration that would cause a given percent reduction in a nonlethal, nonquantal biological measurement, such as growth. For example, an IC_{25} is the estimated concentration of toxicant that would cause a 25 percent reduction in average young per female or growth. IC values may be calculated using a linear interpolation method such as USEPA's Bootstrap Procedure.
- D. No observed effect concentration (NOEC) is the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation. It is determined using hypothesis testing.

II. Chronic Toxicity Screening Phase Requirements

- A. The Discharger shall perform screening phase monitoring:
 - 1. Subsequent to any significant change in the nature of the effluent discharged through changes in sources or treatment, except those changes resulting from reductions in pollutant concentrations attributable to source control efforts, or
 - 2. Prior to permit reissuance. Screening phase monitoring data shall be included in the NPDES permit application for reissuance. The information shall be as recent as possible, but may be based on screening phase monitoring conducted within 5 years before the permit expiration date.
- B. Design of the screening phase shall, at a minimum, consist of the following elements:

1. Use of test species specified in either Table 1 or Table 2 in the following section, Summary of Toxic Test Species Requirements, and use of the protocols referenced in those tables, or as approved by the Executive Officer.
 2. Two stages:
 - a. Stage 1 shall consist of a minimum of one battery of tests conducted concurrently. Selection of the type of test species and minimum number of tests shall be based on Table 3 in the following section, Summary of Toxic Test Species Requirements.
 - b. Stage 2 shall consist of a minimum of two test batteries conducted at a monthly frequency using the three most sensitive species based on the Stage 1 test results and as approved by the Executive Officer.
 3. Appropriate controls.
 4. Concurrent reference toxicant tests.
 5. Dilution series 100%, 50%, 25%, 10%, 5%, 0 %, where “%” is percent effluent as discharged, or as otherwise approved the Executive Officer.
- C. The Discharger shall submit a screening phase proposal acceptable to the Executive Officer. The proposal shall address each of the elements listed above. If within 30 days, the Executive Officer does not comment, the Discharge shall commence with screening phase monitoring.

SUMMARY OF TOXICITY TEST SPECIES REQUIREMENTS

Table 1
Critical Life Stage Toxicity Tests for Estuarine Waters

Species	(Scientific Name)	Effect	Test Duration	Reference
Alga	(<i>Skeletonema costatum</i>) (<i>Thalassiosira pseudonana</i>)	Growth rate	4 days	1
Red alga	(<i>Champia parvula</i>)	Number of cystocarps	7–9 days	3
Giant kelp	(<i>Macrocystis pyrifera</i>)	Percent germination; germ tube length	48 hours	2
Abalone	(<i>Haliotis rufescens</i>)	Abnormal shell development	48 hours	2
Oyster Mussel	(<i>Crassostrea gigas</i>) (<i>Mytilus edulis</i>)	Abnormal shell development; percent survival	48 hours	2
Echinoderms - Urchins Sand dollar	(<i>Strongylocentrotus purpuratus</i> , <i>S. franciscanus</i>) (<i>Dendraster excentricus</i>)	Percent fertilization	1 hour	2
Shrimp	(<i>Mysidopsis bahia</i>)	Percent survival; growth	7 days	3
Shrimp	(<i>Holmesimysis costata</i>)	Percent survival; growth	7 days	2
Topsmelt	(<i>Atherinops affinis</i>)	Percent survival; growth	7 days	2
Silversides	(<i>Menidia beryllina</i>)	Larval growth rate; percent survival	7 days	3

Toxicity Test References:

1. American Society for Testing Materials (ASTM). 1990. Standard Guide for Conducting Static 96-Hour Toxicity Tests with Microalgae. Procedure E 1218-90. ASTM, Philadelphia, PA.
2. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to West Coast Marine and Estuarine Organisms. EPA/600/R-95/136. August 1995.
3. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to Marine and Estuarine Organisms. EPA/600/4-90/003. July 1994.

Table 2
Critical Life Stage Toxicity Tests for Fresh Waters

Species	(Scientific Name)	Effect	Test Duration	Reference
Fathead minnow	(<i>Pimephales promelas</i>)	Survival; growth rate	7 days	4
Water flea	(<i>Ceriodaphnia dubia</i>)	Survival; number of young	7 days	4
Alga	(<i>Selenastrum capricornutum</i>)	Cell division rate	4 days	4

Toxicity Test Reference:

4. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, third edition. EPA/600/4-91/002. July 1994.

Table 3
Toxicity Test Requirements for Stage One Screening Phase

Requirements	Receiving Water Characteristics		
	Discharges to Coast	Discharges to San Francisco Bay ^[2]	
	Ocean	Marine/Estuarine	Freshwater
Taxonomic diversity	1 plant 1 invertebrate 1 fish	1 plant 1 invertebrate 1 fish	1 plant 1 invertebrate 1 fish
Number of tests of each salinity type: Freshwater ^[1]	0	1 or 2	3
Marine/Estuarine	4	3 or 4	0
Total number of tests	4	5	3

[1] The freshwater species may be substituted with marine species if:

- (a) The salinity of the effluent is above 1 part per thousand (ppt) greater than 95 percent of the time, or
- (b) The ionic strength (TDS or conductivity) of the effluent at the test concentration used to determine compliance is documented to be toxic to the test species.

[2] (a) Marine/Estuarine refers to receiving water salinities greater than 1 ppt at least 95 percent of the time during a normal water year.

- (b) Fresh refers to receiving water with salinities less than 1 ppt at least 95 percent of the time during a normal water year.

ATTACHMENT H

Pretreatment Program Provisions

1. The Discharger shall implement all pretreatment requirements contained in 40 CFR 403, as amended. The Discharger shall be subject to enforcement actions, penalties, and fines as provided in the Clean Water Act (33 USC 1351 et seq.), as amended. The Discharger shall implement and enforce its Approved Pretreatment Program or modified Pretreatment Program as directed by the Board's Executive Officer or the EPA. The EPA and/or the State may initiate enforcement action against an industrial user for noncompliance with applicable standards and requirements as provided in the Clean Water Act.
2. The Discharger shall enforce the requirements promulgated under Sections 307(b), 307(c), 307(d) and 402(b) of the Clean Water Act. The Discharger shall cause industrial users subject to Federal Categorical Standards to achieve compliance no later than the date specified in those requirements or, in the case of a new industrial user, upon commencement of the discharge.
3. The Discharger shall perform the pretreatment functions as required in 40 CFR Part 403 and amendments or modifications thereto including, but not limited to:
 - i) Implement the necessary legal authorities to fully implement the pretreatment regulations as provided in 40 CFR 403.8(f)(1);
 - ii) Implement the programmatic functions as provided in 40 CFR 403.8(f)(2);
 - iii) Publish an annual list of industrial users in significant noncompliance as provided per 40 CFR 403.8(f)(2)(vii);
 - iv) Provide for the requisite funding and personnel to implement the pretreatment program as provided in 40 CFR 403.8(f)(3); and
 - v) Enforce the national pretreatment standards for prohibited discharges and categorical standards as provided in 40 CFR 403.5 and 403.6, respectively.
4. The Discharger shall submit annually a report to the EPA Region 9, the State Board and the Regional Board describing its pretreatment program activities over the previous twelve months. In the event that the Discharger is not in compliance with any conditions or requirements of the Pretreatment Program, the Discharger shall also include the reasons for noncompliance and a plan and schedule for achieving compliance. The report shall contain, but is not limited to, the information specified in Appendix A entitled, "Requirements for Pretreatment Annual Reports," which is made a part of this Order. The annual report is due on the last day of February each year.
5. The Discharger shall submit semiannual pretreatment reports to the EPA Region 9, the State Board and the Board describing the status of its significant industrial users (SIUs). The report shall contain, but not is limited to, the information specified in Appendix B entitled, "Requirements for Semiannual Pretreatment Reports," which is made part of this Order. The semiannual reports are due July 31st

(for the period January through June) and January 31st (for the period July through December) of each year. The Executive Officer may exempt a Discharger from the semiannual reporting requirements on a case by case basis subject to State Board and EPA's comment and approval.

6. The Discharger may combine the annual pretreatment report with the semiannual pretreatment report (for the July through December reporting period). The combined report shall contain all of the information requested in Appendices A and B and will be due on January 31st of each year.
7. The Discharger shall conduct the monitoring of its treatment plant's influent, effluent, and sludge as described in Appendix C entitled, "Requirements for Influent, Effluent and Sludge Monitoring," which is made part of this Order. The results of the sampling and analysis, along with a discussion of any trends, shall be submitted in the semiannual reports. A tabulation of the data shall be included in the annual pretreatment report. The Executive Officer may require more or less frequent monitoring on a case by case basis.

APPENDIX A:

REQUIREMENTS FOR PRETREATMENT ANNUAL REPORTS

The Pretreatment Annual Report is due each year on the last day of February. The purpose of the Annual Report is 1) to describe the status of the Publicly Owned Treatment Works (POTW) pretreatment program and 2) to report on the effectiveness of the program, as determined by comparing the results of the preceding year's program implementation. The report shall contain at a minimum, but is not limited to, the following information:

1) Cover Sheet

The cover sheet must contain the name(s) and National Pollutant Discharge Elimination Discharge System (NPDES) permit number(s) of those POTWs that are part of the Pretreatment Program. Additionally, the cover sheet must include: the name, address and telephone number of a pretreatment contact person; the period covered in the report; a statement of truthfulness; and the dated signature of a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for overall operation of the POTW (40 CFR 403.12(j)).

2) Introduction

The Introduction shall include any pertinent background information related to the Discharger, the POTW and/or the industrial user base of the area. Also, this section shall include an update on the status of any Pretreatment Compliance Inspection (PCI) tasks, Pretreatment Performance Evaluation tasks, Pretreatment Compliance Audit (PCA) tasks, Cleanup and Abatement Order (CAO) tasks, or other pretreatment-related enforcement actions required by the Regional Board or the EPA. A more specific discussion shall be included in the section entitled, "Program Changes."

3) Definitions

This section shall contain a list of key terms and their definitions that the Discharger uses to describe or characterize elements of its pretreatment program.

4) Discussion of Upset, Interference and Pass Through

This section shall include a discussion of Upset, Interference or Pass Through incidents, if any, at the POTW(s) that the Discharger knows of or suspects were caused by industrial discharges. Each incident shall be described, at a minimum, consisting of the following information:

- a) a description of what occurred;
- b) a description of what was done to identify the source;
- c) the name and address of the IU responsible

- d) the reason(s) why the incident occurred;
- e) a description of the corrective actions taken; and
- f) an examination of the local and federal discharge limits and requirements for the purposes of determining whether any additional limits or changes to existing requirements may be necessary to prevent other Upset, Interference or Pass Through incidents.

5) Influent, Effluent and Sludge Monitoring Results

This section shall provide a summary of the analytical results from the "Influent, Effluent and Sludge Monitoring" as specified in Appendix C. The results should be reported in a summary matrix that lists monthly influent and effluent metal results for the reporting year.

A graphical representation of the influent and effluent metal monitoring data for the past five years shall also be provided with a discussion of any trends.

6) Inspection and Sampling Program

This section shall contain at a minimum, but is not limited to, the following information:

- a) Inspections: the number of inspections performed for each type of IU; the criteria for determining the frequency of inspections; the inspection format procedures;
- b) Sampling Events: the number of sampling events performed for each type of IU; the criteria for determining the frequency of sampling; the chain of custody procedures.

7) Enforcement Procedures

This section shall provide information as to when the approved Enforcement Response Plan (ERP) had been formally adopted or last revised. In addition, the date the finalized ERP was submitted to the Regional Board shall also be given.

8) Federal Categories

This section shall contain a list of all of the federal categories that apply to the Discharger. The specific category shall be listed including the subpart and 40 CFR section that applies. The maximum and average limits for the each category shall be provided. This list shall indicate the number of Categorical Industrial Users (CIUs) per category and the CIUs that are being regulated pursuant to the category. The information and data used to determine the limits for those CIUs for which a combined waste stream formula is applied shall also be provided.

9) Local Standards

This section shall include a table presenting the local limits.

10) **Updated List of Regulated SIUs**

This section shall contain a complete and updated list of the Discharger's Significant Industrial Users (SIUs), including their names, addresses, and a brief description of the individual SIU's type of business. The list shall include all deletions and additions keyed to the list as submitted in the previous annual report. All deletions shall be briefly explained.

11) **Compliance Activities**

- a) **Inspection and Sampling Summary:** This section shall contain a summary of all the inspections and sampling activities conducted by the Discharger over the past year to gather information and data regarding the SIUs. The summary shall include:
- (1) the number of inspections and sampling events conducted for each SIU;
 - (2) the quarters in which these activities were conducted; and
 - (3) the compliance status of each SIU, delineated by quarter, and characterized using all applicable descriptions as given below:
 - (a) in consistent compliance;
 - (b) in inconsistent compliance;
 - (c) in significant noncompliance;
 - (d) on a compliance schedule to achieve compliance, (include the date final compliance is required);
 - (e) not in compliance and not on a compliance schedule;
 - (f) compliance status unknown, and why not.
- b) **Enforcement Summary:** This section shall contain a summary of the compliance and enforcement activities during the past year. The summary shall include the names of all the SIUs affected by the following actions:
- (1) Warning letters or notices of violations regarding SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate

whether it was for an infraction of a federal or local standard/limit or requirement.

- (2) Administrative Orders regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.
- (3) Civil actions regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.
- (4) Criminal actions regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.
- (5) Assessment of monetary penalties. Identify the amount of penalty in each case and reason for assessing the penalty.
- (6) Order to restrict/suspend discharge to the POTW.
- (7) Order to disconnect the discharge from entering the POTW.

12) **Baseline Monitoring Report Update**

This section shall provide a list of CIUs that have been added to the pretreatment program since the last annual report. This list of new CIUs shall summarize the status of the respective Baseline Monitoring Reports (BMR). The BMR must contain all of the information specified in 40 CFR 403.12(b). For each of the new CIUs, the summary shall indicate when the BMR was due; when the CIU was notified by the POTW of this requirement; when the CIU submitted the report; and/or when the report is due.

13) **Pretreatment Program Changes**

This section shall contain a description of any significant changes in the Pretreatment Program during the past year including, but not limited to: legal authority, local limits, monitoring/ inspection program and frequency, enforcement protocol, program's administrative structure, staffing level, resource requirements and funding mechanism. If the manager of the pretreatment program changes, a revised organizational chart shall be included. If any element(s) of the program is in the process of being modified, this intention shall also be indicated.

14) **Pretreatment Program Budget**

This section shall present the budget spent on the Pretreatment Program. The budget, either by the calendar or fiscal year, shall show the amounts spent on personnel, equipment, chemical analyses and any other appropriate categories. A brief discussion of the source(s) of funding shall be provided.

15) Public Participation Summary

This section shall include a copy of the public notice as required in 40 CFR 403.8(f)(2)(vii). If a notice was not published, the reason shall be stated.

16) Sludge Storage and Disposal Practice

This section shall have a description of how the treated sludge is stored and ultimately disposed. The sludge storage area, if one is used, shall be described in detail. Its location, a description of the containment features and the sludge handling procedures shall be included.

17) PCS Data Entry Form

The annual report shall include the PCS Data Entry Form. This form shall summarize the enforcement actions taken against SIUs in the past year. This form shall include the following information: the POTW name, NPDES Permit number, period covered by the report, the number of SIUs in significant noncompliance (SNC) that are on a pretreatment compliance schedule, the number of notices of violation and administrative orders issued against SIUs, the number of civil and criminal judicial actions against SIUs, the number of SIUs that have been published as a result of being in SNC, and the number of SIUs from which penalties have been collected.

18) Other Subjects

Other information related to the Pretreatment Program that does not fit into one of the above categories should be included in this section.

Signed copies of the reports shall be submitted to the Regional Administrator at USEPA, the State Water Resources Control Board and the Regional Board at the following addresses:

Regional Administrator
United States Environmental Protection Agency
Region 9, Mail Code: WTR-7
Clean Water Act Compliance Office
Water Division

Vallejo Sanitation and Flood Control District
ORDER NO. R2-2006-0056
NPDES NO. CA0037699

75 Hawthorne Street
San Francisco, CA 94105

Pretreatment Program Manager
Regulatory Unit
State Water Resources Control Board
Division of Water Quality
1001 I Street
Sacramento, CA 95814

Pretreatment Coordinator
NPDES Permits Division
SF Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

APPENDIX B:

REQUIREMENTS FOR SEMIANNUAL PRETREATMENT REPORTS

The semiannual pretreatment reports are due on July 31st (for pretreatment program activities conducted from January through June) and January 31st (for pretreatment activities conducted from July through December) of each year, unless an exception has been granted by the Board's Executive Officer. The semiannual reports shall contain, at a minimum, but is not limited to, the following information:

1) Influent, Effluent and Sludge Monitoring

The influent, effluent and sludge monitoring results shall be included in the report. The analytical laboratory report shall also be included, with the QA/QC data validation provided upon request. A description of the sampling procedures and a discussion of the results shall be given. (Please see Appendix C for specific detailed requirements.) The contributing source(s) of the parameters that exceed NPDES limits shall be investigated and discussed. In addition, a brief discussion of the contributing source(s) of all organic compounds identified shall be provided.

The Discharger has the option to submit all monitoring results via an electronic reporting format approved by the Executive Officer. The procedures for submitting the data will be similar to the electronic submittal of the NPDES self-monitoring reports as outlined in the December 17, 1999 Regional Board letter, Official Implementation of Electronic Reporting System (ERS). The Discharger shall contact the Regional Board's ERS Project Manager for specific details in submitting the monitoring data.

If the monitoring results are submitted electronically, the analytical laboratory reports (along with the QA/QC data validation) should be kept at the discharger's facility.

2) Industrial User Compliance Status

This section shall contain a list of all Significant Industrial Users (SIUs) that were not in consistent compliance with all pretreatment standards/limits or requirements for the reporting period. The compliance status for the previous reporting period shall also be included. Once the SIU has determined to be out of compliance, the SIU shall be included in the report until consistent compliance has been achieved. A brief description detailing the actions that the SIU undertook to come back into compliance shall be provided.

For each SIU on the list, the following information shall be provided:

- a. Indicate if the SIU is subject to Federal categorical standards; if so, specify the category including the subpart that applies.

- b. For SIUs subject to Federal Categorical Standards, indicate if the violation is of a categorical or local standard.
- c. Indicate the compliance status of the SIU for the two quarters of the reporting period.
- d. For violations/noncompliance occurring in the reporting period, provide (1) the date(s) of violation(s); (2) the parameters and corresponding concentrations exceeding the limits and the discharge limits for these parameters and (3) a brief summary of the noncompliant event(s) and the steps that are being taken to achieve compliance.

3) POTW's Compliance with Pretreatment Program Requirements

This section shall contain a discussion of the Discharger's compliance status with the Pretreatment Program Requirements as indicated in the latest Pretreatment Compliance Audit (PCA) Report, Pretreatment Compliance Inspection (PCI) Report or Pretreatment Performance Evaluation (PPE) Report. It shall contain a summary of the following information:

- a. Date of latest PCA, PCI or PPE and report.
- b. Date of the Discharger's response.
- c. List of unresolved issues.
- d. Plan and schedule for resolving the remaining issues.

The reports shall be signed by a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for the overall operation of the Publicly Owned Treatment Works (POTW) (40 CFR 403.12(j)). Signed copies of the reports shall be submitted to the Regional Administrator at USEPA, the State Water Resources Control Board and the Regional Board at the following addresses:

Regional Administrator

United States Environmental Protection Agency

Region 9, Mail Code: WTR-7

Clean Water Act Compliance Office

Water Division

75 Hawthorne Street

San Francisco, CA 94105

Pretreatment Program Manager

Regulatory Unit

State Water Resources Control Board

Division of Water Quality

1001 I Street

Sacramento, CA 95814

Vallejo Sanitation and Flood Control District
ORDER NO. R2-2006-0056
NPDES NO. CA0037699

Pretreatment Coordinator

NPDES Permits Division

SF Bay Regional Water Quality Control Board

1515 Clay Street, Suite 1400

Oakland, CA 94612

APPENDIX C:

REQUIREMENTS FOR INFLUENT, EFFLUENT AND SLUDGE MONITORING

The Discharger shall conduct sampling of its treatment plant's influent, effluent and sludge at the frequency as shown in section IX.A of the MRP in this Order..

The monitoring and reporting requirements of the POTW's Pretreatment Program are in addition to those specified in the MRP. Any subsequent modifications of the requirements specified in this Order shall be adhered to and shall not affect the requirements described in the Pretreatment Program unless written notice from the Regional Water Board is received. When sampling periods coincide, one set of test results, reported separately, may be used for those parameters that are required to be monitored by both the MRP and the Pretreatment Program. The Pretreatment Program monitoring reports shall be sent to the Pretreatment Program Coordinator.

1. Influent and Effluent Monitoring

The Discharger shall monitor for the parameters using the required EPA test methods. Any test method substitutions must have received prior written Regional Water Board approval. Influent and Effluent sampling locations shall be the same as those sites specified in the Self-Monitoring Program.

The influent and effluent sampled should be taken during the same 24-hour period. All samples must be representative of daily operations. A grab sample shall be used for volatile organic compounds, cyanide and phenol. In addition, any samples for O&G, polychlorinated biphenyls, dioxins/furans, and polynuclear aromatic hydrocarbons shall be grab samples. For all other pollutants, 24-hour composite samples must be obtained through flow-proportioned composite sampling. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR Part 136 and amendments thereto. For effluent monitoring, the reporting limits for the individual parameters shall be at or below the minimum levels (MLs) as stated in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (2000) [also known as the State Implementation Policy (SIP)]; any revisions to the MLs shall be adhered to. If a parameter does not have a stated minimum level, then the Discharger shall conduct the analysis using the lowest commercially available and reasonably achievable detection levels.

The following standardized report format should be used for submittal of the influent and effluent monitoring report. A similar structured format may be used but will be subject to Regional Water Board approval. The monitoring reports shall be submitted with the Semiannual Reports.

- A. Sampling Procedures – This section shall include a brief discussion of the sample locations, collection times, how the sample was collected (i.e., direct collection using vials or bottles, or other types of collection using devices such as automatic samplers, buckets, or beakers), types of containers used, storage procedures and holding times. Include description of prechlorination and chlorination/dechlorination practices during the sampling periods.

- B. Method of Sampling Dechlorination – A brief description of the sample dechlorination method prior to analysis shall be provided.
- C. Sample Compositing – The manner in which samples are composited shall be described. If the compositing procedure is different from the test method specifications, a reason for the variation shall be provided.
- D. Data Validation – All quality assurance/quality control (QA/QC) methods to be used shall be discussed and summarized. These methods include, but are not limited to, spike samples, split samples, blanks and standards. Ways in which the QA/QC data will be used to qualify the analytical test results shall be identified. A certification statement shall be submitted with this discussion stating that the laboratory QA/QC validation data has been reviewed and has met the laboratory acceptance criteria. The QA/QC validation data shall be submitted to the Regional Water Board upon request.
- E. A tabulation of the test results shall be provided.
- F. Discussion of Results – The report shall include a complete discussion of the test results. If any pollutants are detected in sufficient concentration to upset, interfere or pass through plant operations, the type of pollutant(s) and potential source(s) shall be noted, along with a plan of action to control, eliminate, and/or monitor the pollutant(s). Any apparent generation and/or destruction of pollutants attributable to chlorination/dechlorination sampling and analysis practices shall be noted.

2. Sludge Monitoring

Sludge should be sampled in the same 24-hour period during which the influent and effluent are sampled except as noted in (C) below. The same parameters required for influent and effluent analysis shall be included in the sludge analysis. The sludge analyzed shall be a composite sample of the sludge for final disposal consisting of:

- A. Sludge lagoons – 20 grab samples collected at representative equidistant intervals (grid pattern) and composited as a single grab, or
- B. Dried stockpile – 20 grab samples collected at various representative locations and depths and composited as a single grab, or
- C. Dewatered sludge- daily composite of 4 representative grab samples each day for 5 days taken at equal intervals during the daily operating shift taken from a) the dewatering units or b) from each truckload, and shall be combined into a single 5-day composite.

The U.S. EPA manual, POTW Sludge Sampling and Analysis Guidance Document, August 1989, containing detailed sampling protocols specific to sludge is recommended as a guidance for sampling procedures. The U.S. EPA manual Analytical Methods of the National Sewage Sludge Survey, September 1990, containing detailed analytical protocols specific to sludge, is recommended as a guidance for analytical methods.

In determining if the sludge is a hazardous waste, the Dischargers shall adhere to Article 2, "Criteria for Identifying the Characteristics of Hazardous Waste," and Article 3, "Characteristics of Hazardous Waste," of Title 22, California Code of Regulations, Sections 66261.10 to 66261.24 and all amendments thereto.

Sludge monitoring reports shall be submitted with the appropriate Semiannual Report. The following standardized report format should be used for submittal of the report. A similarly structured form may be used but will be subject to Regional Water Board approval.

- A. Sampling procedures – Include sample locations, collection procedures, types of containers used, storage/refrigeration methods, compositing techniques and holding times. Enclose a map of sample locations if sludge lagoons or stockpiled sludge is sampled.
- B. Data Validation – All quality assurance/quality control (QA/QC) methods to be used shall be discussed and summarized. These methods include, but are not limited to, spike samples, split samples, blanks and standards. Ways in which the QA/QC data will be used to qualify the analytical test results shall be identified. A certification statement shall be submitted with this discussion stating that the laboratory QA/QC validation data has been reviewed and has met the laboratory acceptance criteria. The QA/QC validation data shall be submitted to the Regional Water Board upon request.
- C. Test Results – Tabulate the test results and include the percent solids.
- D. Discussion of Results – The report shall include a complete discussion of test results. If the detected pollutant(s) is reasonably deemed to have an adverse effect on sludge disposal, a plan of action to control, eliminate, and/or monitor the pollutant(s) and the known or potential source(s) shall be included. Any apparent generation and/or destruction of pollutants attributable to chlorination/ dechlorination sampling and analysis practices shall be noted.

The Discharger shall also provide any influent, effluent or sludge monitoring data for nonpriority pollutants that the permittee believes may be causing or contributing to Interference, Pass Through or adversely impacting sludge quality.